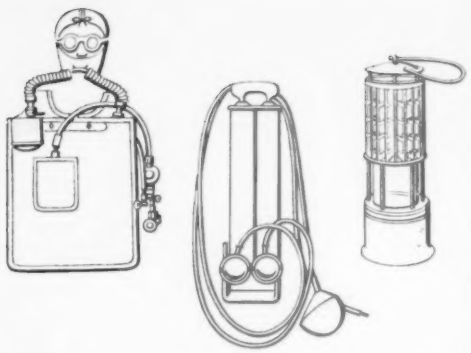
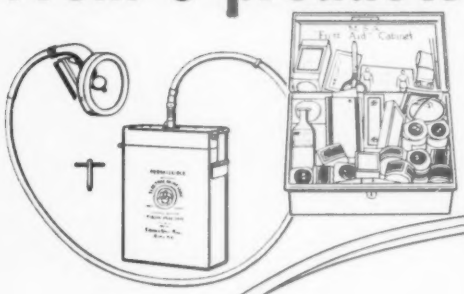
SAFETY NEWS

Welcome
to the
42nd NATIONAL SAFETY
CONGRESS AND
EXPOSITION
OCTOBER 18-22, 1954



From 5 products to more than 3600 . . .



A 40 Year Record of SERVICE TO SAFETY

Keeping pace with safety needs has been our job here at M.S.A. since our beginning on June 14th, 1914. During these years, hundreds of new hazards have been introduced by new industrial processes and projects. Many of these problems were anticipated by us . . . many were relayed to us. The more than 3600 items now in our product line provide ample testimony to the fact that our extensive research and manufacturing facilities were successful in finding the right answers.

Our finest reward for these 40 years of safety service comes from the knowledge that today thousands of men, who otherwise could be seriously injured, are well because M.S.A. products have turned accidents into incidents. This knowledge is a spur to continuing achievement.

SERVING SAFETY 40 YEARS 1914 • 1954

M.S.A.
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42nd NATIONAL SAFETY CONGRESS and EXPOSITION

Official Exposition Guide

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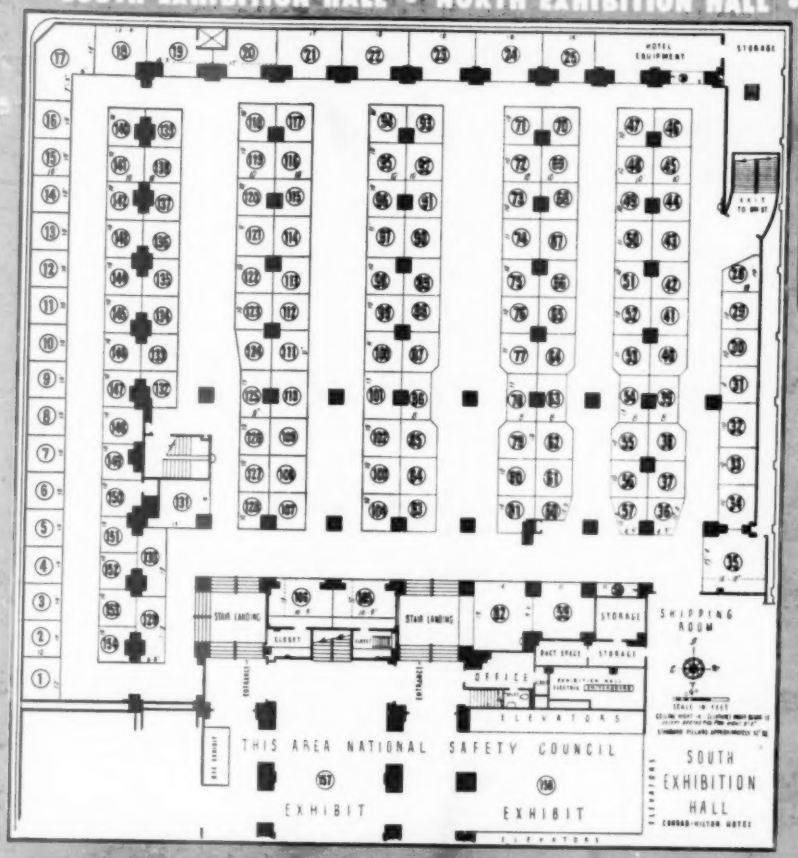

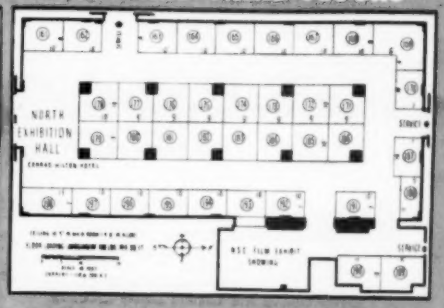

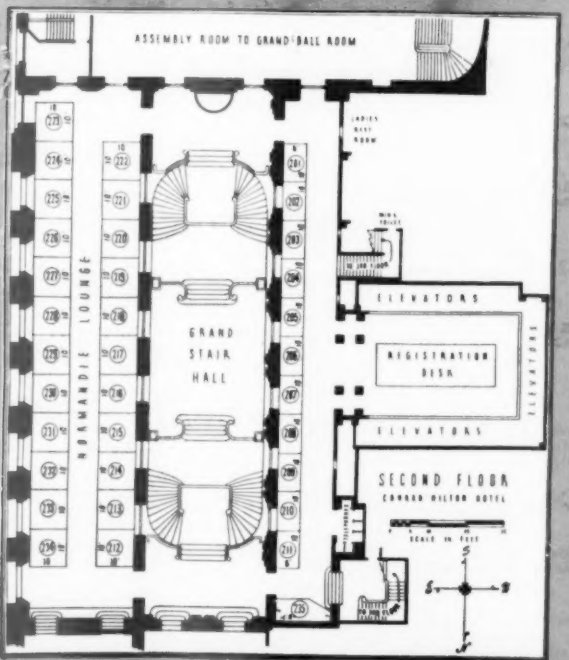

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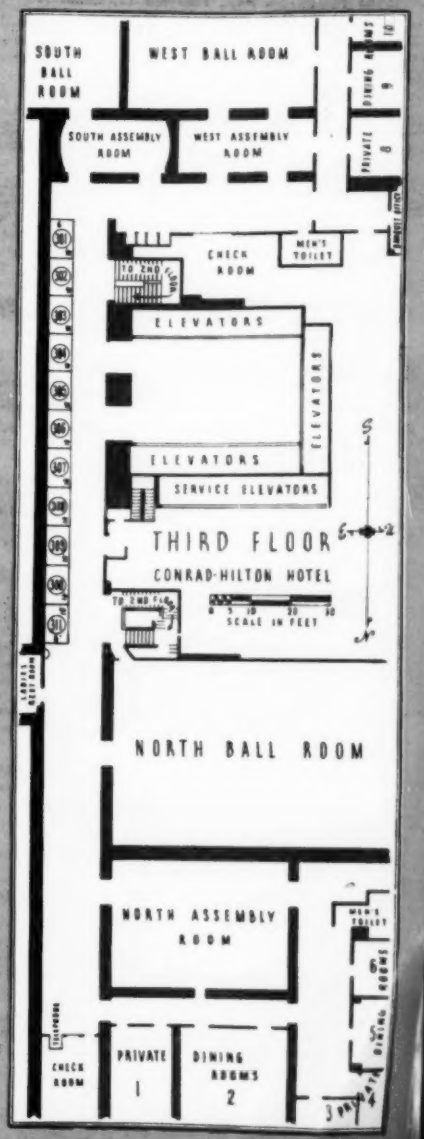
Chicago

OCTOBER 18-22 1954



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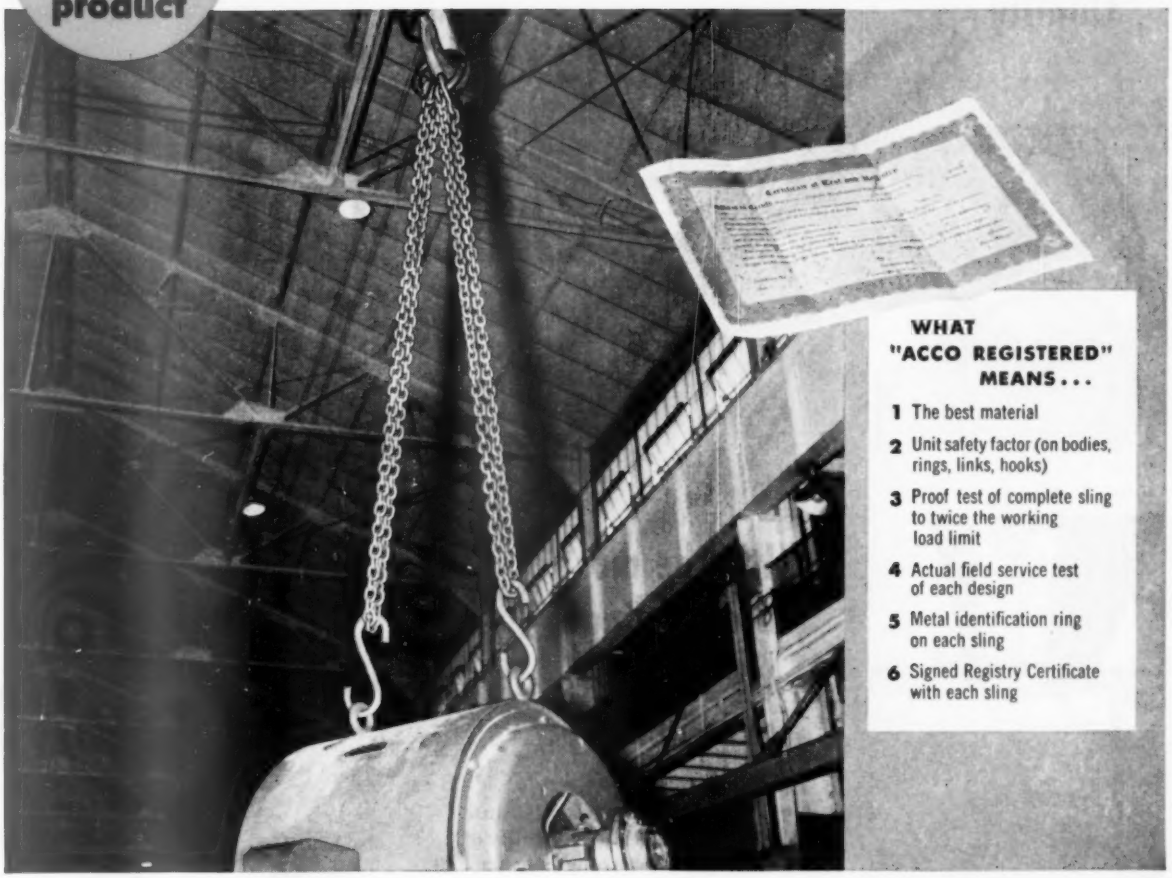

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ACCO *Registered* is more than a name. It's more than a registered trade mark of American Chain & Cable. It is the standard by which all other slings are judged. It means that you can equip your shop with dependable "lifting tools" specifically designed for highest efficiency and long life by trained engineers who spend all their time designing and testing slings.

A survey of your requirements costs you nothing. See your ACCO *Registered* Sling Chain distributor today or write our York, Pa., office.

*Trade Mark Registered

ACCO

TRADE MARK

American Chain Division

AMERICAN CHAIN & CABLE

York, Pa., Chicago, Denver, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, Ore., San Francisco, Bridgeport, Conn.

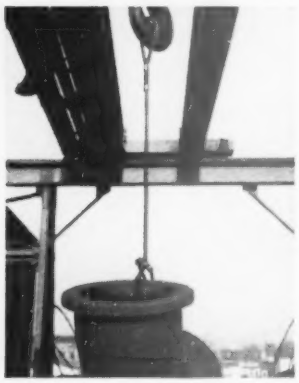
plus Links Shackles Hooks

ACCO Registered* Slings

ACCO Quality

It's Flexible—and It's ALL Steel CABLE-LAID SW-56

Single leg used in basket hitch around heavy rough casting



Another leg used in choker hitch through opening of cast elbow

Two legs used as whip slings for heavy unbalanced load

"It's the most useful sling we have ever had"

• This is what users say because ACCO Cable-Laid has the flexibility of manila rope but the strength of steel. It's made from improved plow steel wire for greatest known strength. Yes, even the independent wire rope core is made of the same tough wire.

The high flexibility of ACCO Cable-Laid comes from the construction of the rope. It's not just six strands around the core, it's six separate wire ropes laid around the wire rope core. This is also what gives ACCO Cable-Laid its fine resistance to kinking even after it has been used around square corners.

Add to ACCO Cable-Laid the patented DUALOC ending—and the ACCO half-thimble—and you have a sling which can't be beat for all-around usefulness and low-cost lifting. In addition to the inherent advantages of the ACCO Cable-Laid construction, these slings are ACCO *Registered* with all of the advantages this specification assures.

Get full details of the SW-56 Cable-Laid and other ACCO Registered Wire Rope Slings from your nearby ACCO Registered distributor—or write our Wilkes-Barre, Pa., office today

**Trade Mark Registered*

ACCO

TRADE MARK

Wire Rope Sling Department
AMERICAN CHAIN & CABLE

Wilkes-Barre, Pa., Atlanta, Chicago, Denver, Houston, Los Angeles, New York, Odessa, Tex., Philadelphia, Pittsburgh, Portland, Ore., San Francisco, Bridgeport, Conn. • In Canada: Dominion Chain Co., Ltd., Niagara Falls, Ont.

for Better Value

ACCO products

✔ Check Your Hoist Needs...

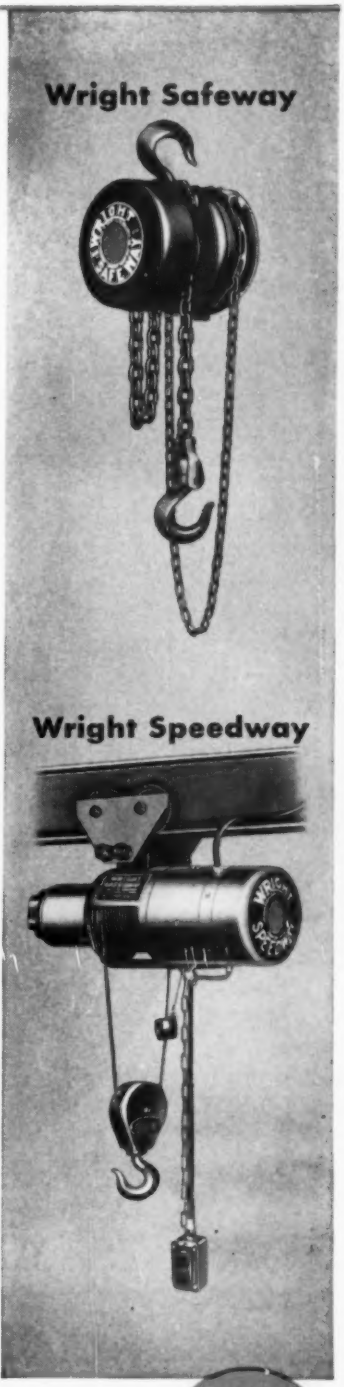
• Here's a check list of the complete line of WRIGHT Hoists that will show you the many models available for a wide variety of lifts around shop or plant.

Wright Hand-operated Equipment

STYLE	TON CAPACITY
CRANES	
☐ Top running, hand traveling	1 to 25
☐ Underhung, hand traveling	1 to 20
☐ Jib type, wall mounted	½ to 5
END TRUCKS for Cranes	
☐ Top running, hand traveling	1 to 10
☐ Underhung, hand traveling	1 to 10
HOISTS	
☐ Wright Safeway, light, portable	½ to 25
☐ Wright Safeway, clevis-connected	½ to 4
☐ High Speed, improved	30 to 50
☐ Handwheel, extended	¼ to 3
☐ Twin hook	¼ to 10
☐ Differential	¼ to 1½
RATCHET LEVER HOISTS	
☐ Wright Pullaway R	
TROLLEY HOISTS	
☐ Wright Safeway Army type	½ to 3
☐ Improved Army type	4 to 10
☐ Hi-Way 600 type	1½ to 24
TROLLEYS ONLY	
☐ Timken	¼ to 40
☐ Hyatt	¼ to 5
☐ SARB	¼ to 12
☐ Wrightway	½ to 3
☐ Double beam	2 to 20

Wright Motor-driven Equipment

CRANES	
☐ Top running	1 to 25
☐ Underhung	1 to 10
DRIVE UNITS for Cranes	
☐ Size 1, with ¾ hp. to 2 hp. motor	
☐ Size 2, with 3 hp. to 7½ hp. motor	
END TRUCKS for Cranes	
☐ Top running for motor drive	
☐ Underhung for motor drive	
HOISTS	
☐ Frame 1, Speedway (all suspensions)	¼ to 1
☐ Frame 1½, Speedway (all suspensions)	1½ and 2
☐ Frame 2, Speedway (all suspensions)	½ to 6
☐ Frame 3, Speedway (all suspensions)	1½ to 10



for information on the complete line of WRIGHT ELECTRIC HOISTS write for Catalog E-54

ACCO

Wright Hoist Division

AMERICAN CHAIN & CABLE

York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

Hoists Trolleys Cranes

Iron Age presents the new Soft-ee SAFETY SHOE

Armored for Safety—Impregnated for Long Wear

This Comfortable, All Purpose, Plain Toe Work Shoe Repels Water, Oils and Acids

Here's another "first" in the long line of Iron Age safety shoe values. It's crammed full of quality features to assure the longest wear, the most comfort. Consider the upper leather. It's Resitan, used here for the first time in any safety shoe. Resitan is a *soft*, mellow tannage impregnated with a wondrous new plastic resinous material that is highly resistant to acids and water. After *two years* of rugged wear tests, these shoes remained just as soft as when new.

Other "extras" include nationally advertised Biltrite green plug Neoprene outsoles, Pacifate linings, Dacron stitching and Barbour storm welts.

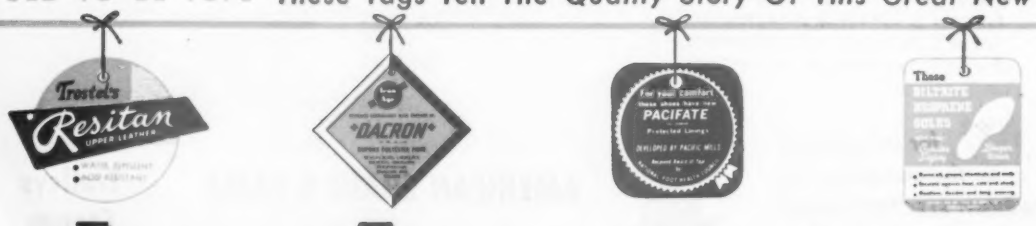
One look will tell you the new Iron Age "Soft-ee" belongs in your stock room. Ask your Iron Age representative to demonstrate or write us.

The Safety Shoe Iron Age *for Industrial America*

No. 679
Sizes 6-13
Widths C-D-E-EEE

Iron Age DIVISION
H. Childs & Co., Inc.
1205 Madison Ave., Pittsburgh 12, Pa.

TAGGED TO BE TOPS *These Tags Tell The Quality Story Of This Great New Value*



Iron Age *Safety Shoes*

SAFETY LENS QUALITY IS NEVER A LUXURY

Bausch & Lomb J-68 metal safety glass with acetate nose and side shields.

High speed photo of drop ball test. Bal-SAFE lenses far exceed Government specifications for impact resistance.

Bal-SAFE lenses surest defense against costly eye accidents

There's no room for doubt, no reason for regret, when your workers are equipped with safety eyewear fitted with Bal-SAFE industrial lenses.

To insure maximum quality of protection, Bausch & Lomb keeps control of all production from start to finish—through glass making, precision lens manufacturing stages—to superior, uniformly accurate lens hardening.

Impact resistance to an extraordinary degree is built into Bal-SAFE lenses through a precision controlled heat treating process that radically changes and strengthens the glass structure.

Rest assured. Always specify Bausch & Lomb safety eyewear with Bal-SAFE industrial lenses. Contact the representative in your area.

Win a Bausch & Lomb
BINOCULAR
or Ray-Ban Sun Glasses

Visit us at the National Safety Congress and Exposition, October 18th to 22nd and submit your entry in the novel Bausch & Lomb

"Guessing Contest"

Booths 51 to 53

BAUSCH & LOMB
SINCE 1853

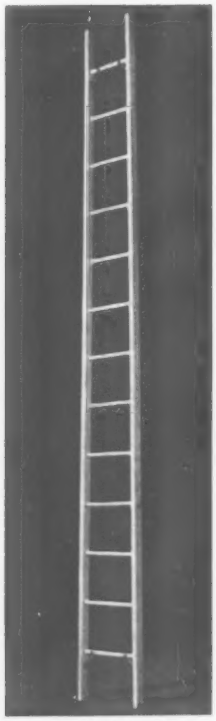
Just mail this coupon with your business letterhead to get your free copy of "Complete Eye Protection."

BAUSCH & LOMB OPTICAL COMPANY
90334 Smith St., Rochester 2, N. Y.

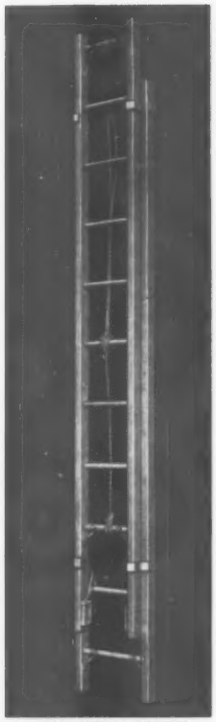
GOLD MEDAL
LADDERS
SCAFFOLDING

Safe Ladders and Scaffolding for Every Purpose . . .

GOLD MEDAL SAFETY PLATFORM LADDER
Wide working platform, tool rack at top, rung back, steps knee braced and truss rodded. Sizes 5′ to 20′ overall.



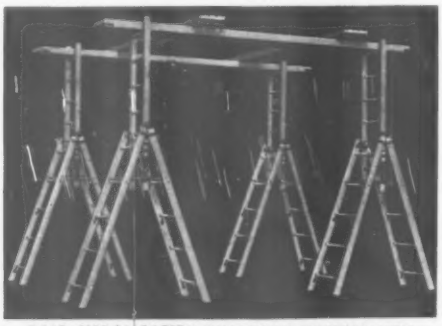
GOLD MEDAL SINGLE
Hand split rungs, rung braces and tie rods. Size 8′ to 24′.



GOLD MEDAL SAFETY EXTENSION LADDER
Automatic Safety Locks, rope and pulley, hand split rungs, rung braces, sizes 20′ to 52′.

GOLD MEDAL MECHANIC STEP LADDER
A heavy duty ladder, rung back, knee braces and truss rods, safety spreader. Sizes 4′ to 20′.

GOLD MEDAL SAFETY LADDER FEET
Rubber, Cork, Carborundum, Steel Point.



GOLD MEDAL SAFETY EXTENSION TRESTLES AND FEATHERWEIGHT STAGES
For overhead work at varying heights. Sizes 6′ extend to 10′ up to 20′ extend to 35′. Stage sizes 12′ to 24′.

FOR GREATER SAFETY...EFFICIENCY...ECONOMY

THE PATENT SCAFFOLDING CO., Inc.

38-21 12th ST., LONG ISLAND CITY 1, N. Y.

ATLANTA 3, Ga. .....30 Haynes St., N.W.
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HARTFORD 6, Conn. .....67½ Madison St.
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NEWARK 5, N. J. .....746 South 12th St.
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PHILADELPHIA 37, Pa. .....2900 Bridge St.
PITTSBURGH 12, Pa. .....1254 Veskamp St., N.S.
ST. LOUIS 14, Mo. .....6168 Bartmer Ave.
SAN FRANCISCO 3, Calif. .....1605 Mission St.
SEATTLE 9, Wash. .....420 Eighth Ave., N.

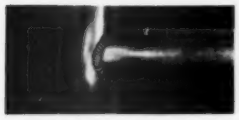
Aluminum Rolling Scaffolds

ALUMINUM
FOLD-A-WAY
TRADE MARK
SCAFFOLD

Swings open like a book—assembles in minutes. Base unit is 4'6" x 6' x 7' high; other sections 6' high and 42" high. Folds compact for storage. U.L. Approved.

THESE FEATURES INSURE SAFETY, EASY ERECTION AND LONG LIFE

Spring lock securely holds braces and stairways in position. Note external locking pin and spring for easy cleaning.



"Form-Grip" coped and full-welded joints provide extra rigidity and long life.

Positive-locking ball-bearing extension leg raises scaffolds with maximum speed and safety. 2 turns of collar gives 1" adjustment up to 24".

4'6" EXTRA-WIDE LADDER SCAFFOLD

Light-weight aluminum scaffold provides added stability for maintenance, relamping, etc. Clearances up to 5'10" high by 9' wide. Intermediate and extension sections are 5'4" and 4'. Spans of 6', 8' and 10'. 16" rung spacing provides wide choice of platform heights.

2' WIDE LADDER SCAFFOLD

Rolls easily through standard door openings. Working level adjustable from 1' to 8¾' high.

ALUMINUM SAFETY LADDERS

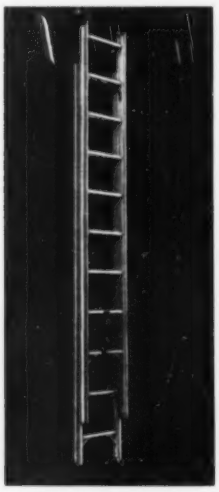
STEP LADDERS

Light, strong, corrosion resistant. Available in 4', 5', 6', 7' and 8' heights.

See our Exhibit at the National Safety Congress.

VISIT BOOTHS 98 and 99

SINGLE LADDERS
Strong, sturdy, easy to handle. Available in 4' to 20' heights.



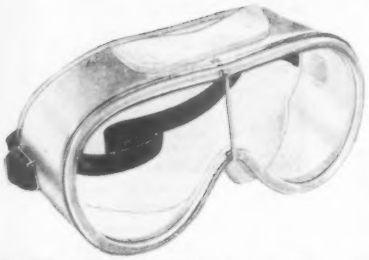
EXTENSION LADDERS
Continuous interlocking side rails; automatic spring locks; 1¼ x 1" half-round rungs. 16" to 32' heights.

YOU GET COMFORT PLUS BETTER EYE PROTECTION

WATCHEMOKET
STAC-VENT
eye SAVERS

A New Principle in Goggle Ventilation gives *Greater Safety—Clearer Vision*. No liquid, chemical or other hazard can reach the eye. "Stac-Vent" provides draft ventilation at the top and center of the goggle (where warm, moist air normally accumulates).

STAC-VENT



Model 440SV

For heavy impact, supplied with .125" thick, optically perfect methacrylate lens.

Model 441SV

For medium and light impact. Supplied with .060" thick, optically perfect acetate.

SOFT VINYL FRAME — Fits Over Largest Prescription Glasses

Extra-soft plastic frame with soft nose flange form-fits snugly, yet comfortably, around facial contour . . . closes the gaps around nose and cheeks. Also available with regular, screen or no ventilation.

EXTRA WIDE REPLACEABLE LENS

The optically perfect, shatterproof lens provides full protection against impact. Lens is extra wide for picture-window vision. Improved metal lock bar holds lens tightly in frame. Frame acts as bumper to prevent scratching lens when laid face down.

LENS COLORS: Clear and light, medium or dark green.
FRAME COLORS: Clear, transparent green or opaque black.

Model 442

Soft Vinyl Frame 50 MM Round Hardened Safety Glass Lenses

Maximum protection where there is extreme abrasion. Maximum comfort and minimum weight. Large size, fits over all prescription glasses.

Model 492

WELDING GOGGLE OPAQUE BLACK SOFT VINYL FRAME

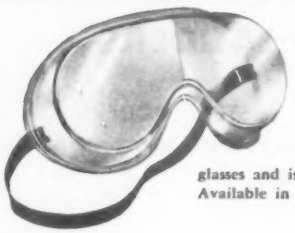
Furnished with replaceable 50 mm round, Federal Specification, filter lens shades 3, 4, 5 or 6, protected inside and out by cover lenses.

Model 99

CHEEPEE

Low cost one piece acetate. Close fitting, lightweight, comfortable. Optically correct . . . no distortion. Available in clear or medium green.

Model D-Lux



FITS OVER MOST GLASSES

The acetate lens surface is optically perfect thanks to a special process which protects the lens during forming. This one piece D-Lux acetate goggle is large enough to fit over most glasses and is close fitting for maximum protection and comfort. Available in clear and medium green.

For details, see your Authorized Eye Savers Supplier or write direct.

Quality Eye Protective Equipment **Made by the Leaders in Plastics**

WATCHEMOKET OPTICAL CO., INC.

234 West Exchange St., PROVIDENCE 3, R. I. *In Canada: Levitt-Safety Limited, Toronto 10, Montreal 26*

QUALITY AT LOWER COST
WITH THE EYE SAVERS LINE!

Model 415 **TUC - AWAY**

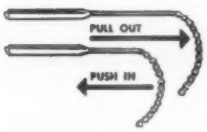
For Lightweight Comfort

90% PROTECTION THAT'S WORN 100% OF THE TIME

Tuc-Away featherlight design is easy to wear . . . comfortable and attractive. Shatterproof, optically perfect, methacrylate lenses provide safe protection.

SNAP-IN, SNAP-OUT LENSES

All "Tuc" lenses are optically perfect. They can be replaced by the wearer . . . just snap them in or out . . . they are always firmly locked in place.



Adjustable "Retrax" Temples

Temples are adjusted by the wearer himself for complete comfort . . . no tools or skill required . . . "Tucs" fit any face.

VISOR - TUC **Model 422**

New Over-eyes Protection

ALMOST 100% PROTECTION THAT'S WORN 100% OF THE TIME

Almost 100% protection, plus all the comfort of "Tuc-Away," "Visor-Tuc" fits snugly against the forehead to provide over-eyes protection from glare and flying particles.

SHATTERPROOF, SEMI-CUP EYE SAVERS LENSES

prevent entry of particles from side and bottom. Lenses are interchangeable in "Tuc-Away" and "Visor-Tuc" models. Lenses are available with regular side shield, long (1") side shield or semi—or full—cup, in clear and light, medium or dark green.

Low Initial Cost — Low Maintenance

A minimum inventory is possible because either frame style, "Visor-Tuc" or "Tuc-Away," fits all workers thanks to "Universal" Nose-piece and "Retrax" Temples. All adjustments are made by the wearer.

SPLIT JOINT **Model 80**

Split Joint Plastic Frame makes changing lenses a simple operation, no heating to distort frame. Retrax temple easily adjusted—one size, Standard 47 mm drop eye lenses.

Quick, easy replacement of:
Plastic Safety Lenses
Prescription Lenses
Plano Safety Glass Lenses

"CLIP-ON" SIDE SHIELDS

Add deep cup side protection to Model 80 and practically any other Safety Spectacle. Easy to attach and remove. Molded of clear or green acetate. Nickel-silver clip holders.

Model 55

"Methaspec" Eye Shield

LOW COST VISITORS' GOGGLES

Optically correct, one piece, curved Methacrylate Eye Savers Lens provides heavy impact protection. Lens is .080" thick, available in clear or light, medium and dark green.

Quality Eye Protective Equipment ***Made by the Leaders in Plastics***

WATCHEMOKET OPTICAL CO., INC.

234 West Exchange St., PROVIDENCE 3, R. I. *In Canada: Levitt-Safety Limited, Toronto 10, Montreal 26*

just a few of the new you'll

Come see many more!

NATIONAL SAFETY CONGRESS, CHICAGO

LEHIGH
SAFETY SHOE COMPANY
EMMAUS, PA.

NEW! WINTER-PAC—No more frozen feet from working in icy-slush or mud! This 12" pac is built with a thick, wool-fleece *interlining* up to the ankle seam, to keep cold out, body heat in.

NEW! CUSHIONED-INNER MOCCASIN—a handsome new moccasin oxford in today's popular lighter tan—with the foam-cushioned innersole that helps to reduce job-fatigue. Non-marking, oil-resistant sole and heel. As smart for leisure wear as it is safe on the job.

NEW! RESISTS CHEMICALS—Many common chemicals "eat" ordinary shoe leather and rubber. This shoe resists chemical dust, fumes and splatters that make others rot and crumble.

safety shoe ideas find at Booth 87

NEW! FOR WOMEN IN WHITE—an especially attractive and comfortable oxford in smooth white leather, with smart white Neolite crepe wedgie sole (NO heel to catch on steps and ledges). Your women employees will wear it for bowling and sportswear, too!

NEW! THERMAliner—the entire upper is padded with a layer of foamed vinyl, sandwiched in leather, that effectively insulates the foot against foundry heat or sub-zero cold. Insulation will not absorb moisture, perspiration, oil or odors. Also in 8-inch boot shoe style.

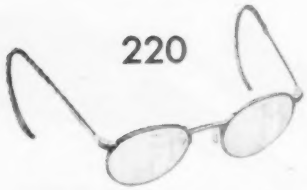
NEW! EASY OUT when hot stuff splatters! Top quality foundry boot with mahogany eskimo calf upper—new high-heat resistant neoprene composition sole and heel—dacron-stitched throughout. Designed to give long, safe wear under gruelling hot-mill conditions.

NEW! GUIDE STEP—black calf U-Wing style built over the amazing new Lehigh last that is Contour-Measured to fit better at 19 points instead of the usual 4! Designed expressly for the man who "can't wear" safety shoes, but more comfortable for most feet.

NOW!

YOU CAN ORDER ANY OF PRODUCTS DIRECT FROM

PENOPTIC



METAL FRAME spectacle type safety goggles . . . five models in the series.

PENOPTIC

PLASTIC FRAME spectacle type safety goggles . . . five models in the series.

PENOPTIC

CHIPPERS' cup - type safety goggles . . . with new 3-way ventilation.

PLASTIC all - purpose cover goggle . . . fits over large frame personal glasses.

FACE SHIELDS . . . a model for every face shield requirement.

WELDING HELMETS of fiber glass or fiber . . . nine models in the line.

For prices and full information write directly to Pennsylvania Optical Co., Reading, Pa. or 1712 Taraval

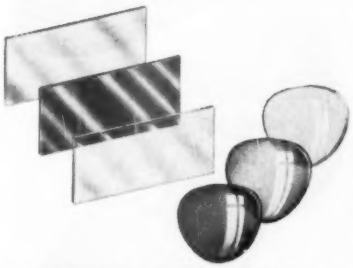
PENNSYLVANIA OPTICAL

Known For Fine Ophthalmic

THESE PENOPTIC SAFETY THE MANUFACTURER....

PENOPTIC

WELDERS' cup-type goggles . . . featuring better ventilation.



SAFETY LENSES and welding filter plates meet all Federal Specifications.

Speedily...

Economically!

Measure the quality of Penoptic head and eye protective equipment . . . by your tests, by the yardstick of Federal Specifications or by both. Each item will conform with the high quality standards demanded by a safety-conscious industry. This achievement of quality in a relatively new line is easily understood when you consider the history of the company. Penoptic products are manufactured and distributed by the Pennsylvania Optical Company . . . one of America's foremost producers of fine ophthalmic goods since 1886. These sixty eight years of experience, as applied to the production of Penoptic safety products, makes them quality leaders in the safety field. Equally important, Penoptic's streamlined, manufacturer-to-you distribution offers you substantial reductions in your cost of worker protection . . . and enables you to deal with the people directly responsible for product performance.

SEE Them, TEST Them, PRICE Them

At BOOTH 125 At The

NATIONAL SAFETY CONGRESS

St., San Francisco 16, Cal.

COMPANY, READING, PA.

Products Since 1886

New styles

HY-TEST

H204—Moccasin Type Oxford in new Maple Shrunken Leather; Natural Nuclear Resist-Oil Sole; Brown Rubber Heel; Storm Welt.

New

H207—Plain Toe Oxford in Brown Glove; Brown Resist-Oil Cord Sole and Heel; Brown Resist-Oil Midsole; Storm Welt.

H208—Plain Toe Oxford in Brown Glove with imitation Moccasin Stitching, featuring Cookie Cushion Insole; new Brown Resist-Oil Grit Sole and Heel; Storm Welt.

H966—Same as H208 except Shoe with Cord Outsole.

New

New features

H503—U-Wing Laceless Oxford in Brown Side; Natural Nuclear Resist-Oil Sole; Brown Rubber Heel.

H504—French Bound Plain Toe Oxford in Brown Shrunken Leather; Natural Nuclear Resist-Oil Sole; Brown Rubber Heel.

NEW

H510—Plain Toe Oxford in Brown Shrunken Leather; Brown Air Cushion Cork Sole and Heel.

H517—U-Wing Oxford in Black Side; Leather Sole; Rubber Heel.

H518—U-Wing Punched Leather Ventilated Oxford in Brown Side; Natural Nuclear Resist-Oil Sole; Brown Rubber Heel.

New

New

WHY SETTLE FOR LESS?

...Buy HY-TEST

SCORES *again!*

11 COMPLETELY NEW ADDITIONS TO THE WORLD'S LARGEST *and LARGEST SELLING* SAFETY SHOE LINE

New comfort

HY-TEST
ANCHOR FLANGE
Safety Shoes

DIVISION OF
INTERNATIONAL SHOE COMPANY
ST. LOUIS 3, MO.
PHILADELPHIA 23, PA.

NEW

H990—8" Plain Toe Blucher in Brown Glove, featuring Cookie Cushion Insole; Brown Resist-Oil Cord Sole and Heel; Brown Resist-Oil Midsole; Storm Welt.

H942—Lace-to-Toe Blucher in Brown Glove; Brown Neocord Sole and Heel; Storm Welt.

New

New

HY-TEST
INTERNATIONAL SHOE COMPANY
SAFETY SHOES

Write for NEW Catalog-Broadside

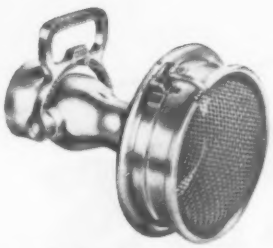
and get the *Best!*

New Ways to Fight Fire

Rockwood offers you two big advantages. One is long, practical experience in manufacture and in the field. The other is constant research that results in new methods and new devices to fight fire. These pages show you a few of the many products developed by Rockwood that have a vital part in fire protection programs throughout this country.

For further details on these products, and many, many others, write for your free copy of the Rockwood Catalog, "Fire Fighting Products." ROCKWOOD SPRINKLER COMPANY, 330 HARLOW STREET, WORCESTER 5, MASS. Distributors in all principal cities.

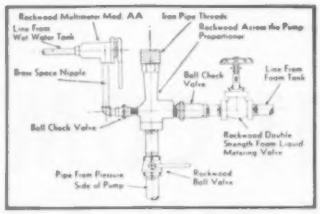
ROCKWOOD



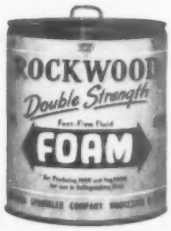
Type FFF FogFOAM Nozzle. Discharges FogFOAM, Solid FOAM stream, and High Velocity WaterFOG.

Type SG-48 WaterFOG Nozzle. Easy to handle. Discharges high or low velocity WaterFOG or straight water stream.

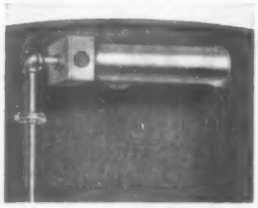
Foam Eductor. Introduces FOAM liquid into hose lines. Used with Type FFF FogFOAM Nozzles.


Rockwood Multimeter Mod. AA
Iron Pipe Threads
Line From Wet Water Tank
Rockwood Across the Pump Proportioner
Brass Space Nipple
Ball Check Valve
Line From Foam Tank
Ball Check Valve
Rockwood Double Strength Foam Liquid Metering Valve
Pipe From Pressure Side of Pump
Rockwood Ball Valve

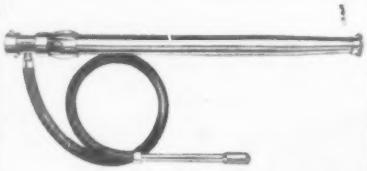
Proportioning Systems. Used when pressure is maintained by pump. Custom-engineered systems also available.



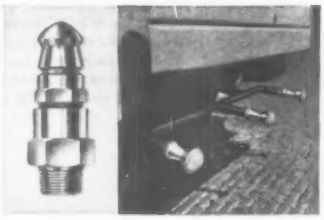
Double Strength Foam Liquid for fire hose line Nozzles and permanently piped FogFOAM and FOAM installations.



Rockwood Foam Maker and Chamber. Used for fighting flammable liquid tank fires.



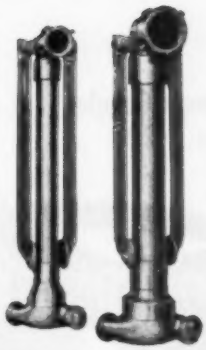
Standard Straight Foam Play Pipe and FOAM pick-up tube. Discharges solid FOAM stream.



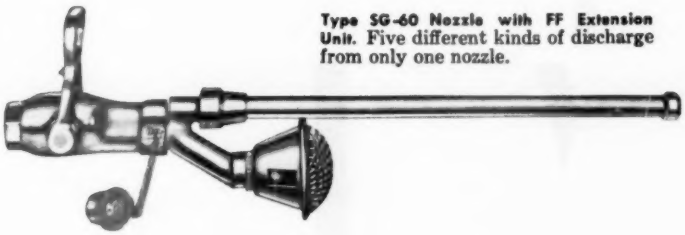
Under Truck and Ground Sweep Nozzles. Used to protect front of fire trucks and parts under trucks.

ROCKWOOD
SPRINKLER COMPANY

Hydraulically or Manually Controlled Type FFF FogFOAM Turret Nozzle for airport crash fire fighting trucks and special fire fighting trucks for oil refineries, chemical and industrial plants and municipalities.

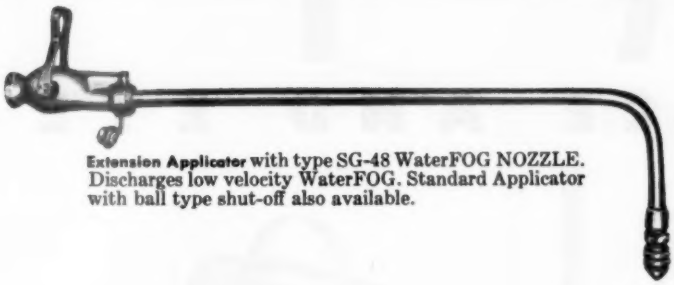


Lightweight Rotating Cellar and Attic Pipe. Fights fires in cellars, attics, under piers, bridges, etc. Also available in a short unit with swivel but without extension barrel.



Type SG-60 Nozzle with FF Extension Unit. Five different kinds of discharge from only one nozzle.

Rockwood Ball Type Shut-Off. Gives operator complete control of water flow from nozzles.

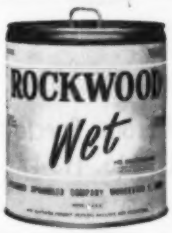


Extension Applicator with type SG-48 WaterFOG NOZZLE. Discharges low velocity WaterFOG. Standard Applicator with ball type shut-off also available.

High Capacity WaterFOG Nozzle. Quickly controls and extinguishes large fires in buildings and flammable liquids.

Type N22 WaterFOG Nozzle. Discharges high velocity WaterFOG. For general use around live electrical equipment.

Rockwood Type N-23 WaterFOG Nozzle with swivel handles. Discharges high velocity WaterFOG with higher discharge, greater range than type N-22 Nozzle.



Rockwood Wet wetting agent. Increases fire extinguishing action of water making a little water go a long way.

Engineers Water . . . to cut fire losses

Welsh-Guard

Welders Cover Goggles
STYLE No. H22

Welsh-Guard

Dust-Free Fog-Free Goggles
STYLE No. 1040

WE

FACE AND EYE

Welsh-Guard

Metal Frame Spectacle Goggles
STYLE No. H34

Welsh-Guard

Featherweight Face Shields
STYLE No. F120

See all Welsh Safety Products at BOOTH 124
Main Exhibit Hall
National Safety Congress

"Safeguard

Established

Welsh-Guard

Acetate Frame Spectacle Goggles
STYLE No. H20

Welsh-Guard

Featherweight Plastic Goggles
Clear and Green
STYLE No. 1050

LSH

PROTECTIVE PRODUCTS

Welsh-Guard

Welders Fiberglass Helmet
STYLE No. 700-3-C

Welsh-Guard

Featherweight Plastic Goggles
Clear and Green
STYLE No. 1060

with Welsh-Guards"

1925

WELSH MANUFACTURING COMPANY
11 Magnolia Street • Providence, R. I.

High Shoe (4111). Plain-toed shoe in supple brown leather. Four eyelets, three hooks for secure lacing. Leather-lined, steel toe cap. Oil-resistant Neoprene Tri-Vac sole and heel.

Low Oxford (4381). Plain-toed blucher of warm, red-brown leather. Winguard 400 leather-lined steel toe cap. Oil-resistant Neoprene Tri-Vac sole and heel with slip-proof vacuum cups.

New Thom McAn Safety Shoes now feature the sensational ARMED FORCES' TRI-VAC SOLE

Only recently released for civilian use, this patented, skid-proof, vacuum-grip sole joins the ranks of Thom McAn's major safety-shoe innovations

Now Thom McAn brings you the revolutionary sole which the U. S. Navy developed for heavy-duty on decks of air-craft carriers. It really holds the ground on surfaces that are wet, oily, or dangerously icy. And because these soles are made of Neoprene, they can take it long and hard around acids, chemicals, oil and gas.

Thom McAn was the first major company to introduce this latest advance in safety shoe design. We are now making and selling more shoes with the Tri-Vac sole than anyone else in the field.

Thom McAn Tri-Vacs mean increased safety in your plant for three reasons. 1. Multiple soft ribs insure squeegee-like brake action. 2. Vacuum suction-gripping is increased by the cup-inside-cup construction. 3. Countersunk channels around each cup trap liquids at point of contact, produce drier, safer tread.

With these new Thom McAns you get the extra advantage of the Tri-Vac sole at a price equal to or lower than that of most ordinary safety shoes.

SOLD TWO WAYS

1. At Thom McAn stores. 2. Direct to your plant. Send today for full details of our plant-sale plan and Thom McAn's 4-way employee purchase plan —plus descriptions of the Thom McAn Safety Shoe line. Write: Thom McAn Safety Division, 25 West 43rd Street, New York 36, N. Y.

VISIT THOM McAN: Booth #118 at this year's National Safety Council Meeting, Chicago, Oct. 18-22

Thom McAn
SAFETY SHOES
A DIVISION OF MELVILLE SHOE CORPORATION

THE LEADERSHIP OF

WILLSON QUALITY CONTROL*

makes the DIFFERENCE in safety with comfort!

***WILLSON RESEARCH**

As the man responsible for safety in your plant . . . don't you feel better knowing that Willson pioneering and continuing research are resulting in the most up-to-the-minute developments . . . in the safety equipment your workers depend on?

***WILLSON EXPERIENCE**

Certainly Willson's 84 years' experience—gained by helping safety directors provide protection for their workers against industrial hazards—gives you added confidence in the high quality of the Willson line. That goes for the safety spectacles and goggles your workers wear . . . the respirators and gas masks they use . . . the face shields and helmets they put on.

***WILLSON CRAFTSMANSHIP**

When it bears the Willson name you *know* . . . your safety equipment is as perfect as finest craftsmanship and the most scientifically precise testing methods in the field can make it . . . to keep your workers on the safe side on hazardous jobs.

WE'LL LOOK FOR YOU AT THE 1954 NATIONAL SAFETY CONGRESS!

Be sure to see Willson's newest developments in the safety equipment field . . .

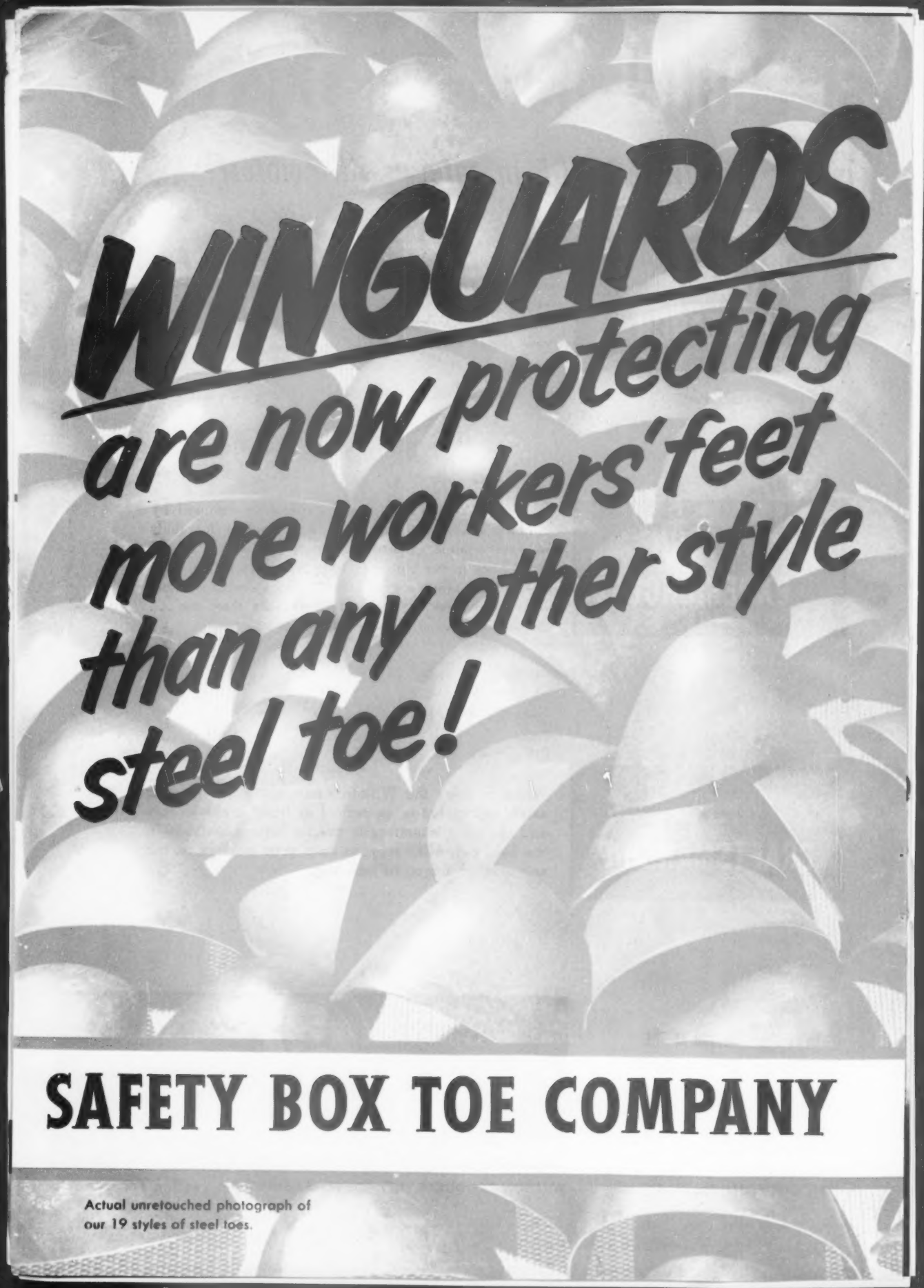
VISIT OUR BOOTH No. 107-108-109!

More than 300 Safety Products Carry This Famous Trademark

WILLSON®

Established 1870

WILLSON PRODUCTS, INC., 205 Washington Street, Reading, Pennsylvania


WINGUARDS
are now protecting
more workers' feet
than any other style
steel toe!
SAFETY BOX TOE COMPANY
Actual unretouched photograph of
our 19 styles of steel toes.

All of Safety Box Toe Company's 19 styles of safety toes are made from tough high-carbon austempered steel and are the result of rigid specifications carefully controlled. Each style has its own degree of safety to protect your workers' feet.

Of all these 19 styles, however, WINGUARDS are by far the most popular and will pass the 4 million pair mark this year.

Whenever a new safety problem arises, Safety Box Toe Company has the correct toe to meet your requirements.

See us at Booth 161

The 42nd National Safety Congress Exposition

October 18-22, 1954

Conrad Hilton Hotel · Chicago

812 STATLER BUILDING · BOSTON

SELLING AGENTS: BECKWITH MANUFACTURING COMPANY, DOVER, N. H.

WRIGHT-GUHMAN COMPANY, ST. LOUIS, MO. BECKWITH BOX TOE, LTD., SHERBROOKE, P. Q., CANADA LENNART LJUNGQVIST, TIBRO, SWEDEN

On Cranes of All Types, The

Tuffy Team

Will Run Longer!

Now, there is no need to monkey with a lot of different rope constructions trying to find a hoist line and sling combination that will give you the most service. This pair of special purpose constructions will handle your crane work as it never was handled before.

Oldest of this tough work-team is Tuffy Slings. From the very start they set new standards of service life throughout industry—continue to set records in keeping sling cost down and the safety record clear. The reason? An entirely new patented 9-part machine braided wire fabric construction so flexible you cannot materially damage the fabric when kinking and knotting, and so tough that users asked for a hoist line to match in wearability.

Newest of the hoisting team is Tuffy Hoist Line. It's a new rope construction, specially designed for the special purpose of hoisting on any and all cranes. Designed into it is flexibility, wearability and extra toughness to absorb load shocks. Taken out of it is every undesirable feature which many months of laboratory research and testing and many more months of field testing uncovered in other rope constructions used for hoist lines.

Just length, diameter and "Tuffy Hoist Line" is all you need to say! No complicated specifications, no chance for confusion! Get *extra* hoisting service at no extra cost with Tuffy Hoist Line!

NEW **Tuffy** HOIST LINE

Tuffy SLINGS

48-Page Handbook and Riggers' Manual, sent to you on request! Write today for handbook and complete information on Tuffy Hoist Line.

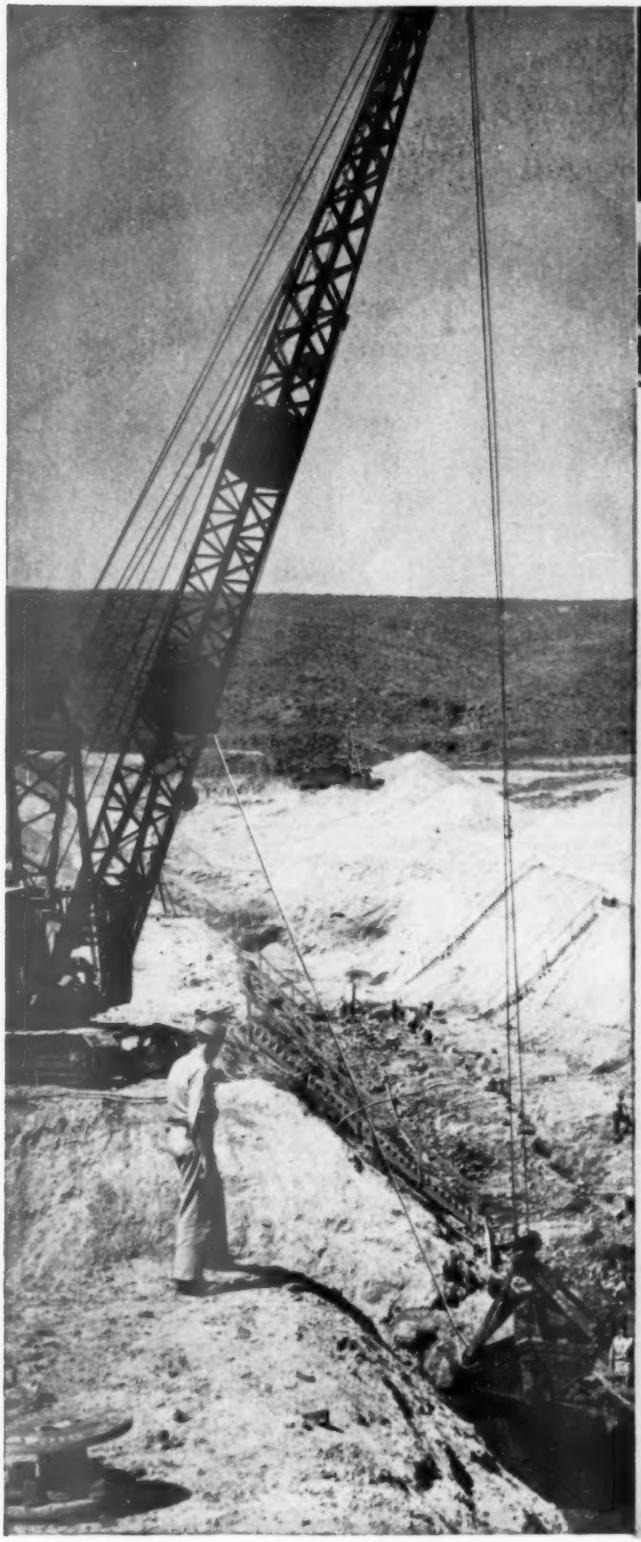
Be Sure...Be Firm
Tell Your Distributor Tuffy Hoist Line...
and the diameter and length—that's all he needs to know! For slings, specify Tuffy, sling type, diameter, length and fittings. Or buy Tuffy Braided Wire Fabric on the reel if you do your own rigging. Remember, your distributor can always supply the Tuffy you need!

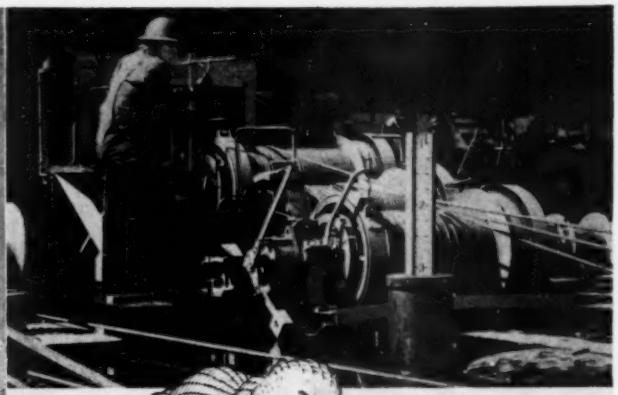
union Wire Rope **corporation**

2224 Manchester Ave. • Kansas City 26, Mo.

Specialists in High Carbon Wire, Wire Rope and Braided Wire Fabric

OR ON CLAMSHELLS AND DERRICKS





A NEW

Tuffy®
HOIST LINE

Designed to Out-perform Any Rope Construction You've Ever Used For Crane Hoisting!

No doubt you've used several different rope constructions on different crane hoisting operations. Now, there is an entirely new construction for crane hoisting purposes which gets you out of complicated specifications in ordering and enables you to keep your reserve rope stock down to the very minimum.

Tuffy Hoist Line is now on the market because no other rope construction could stand up to it through many months of testing in the unmatched Union Wire Rope laboratory. More months of field testing, under tough operating conditions, proved to machine operators the superiority of Tuffy Hoist Line over the best rope constructions they had ever used for Crane Hoisting.

That is the best way for you, too, to see how much longer Tuffy Hoist Line will run on your clamshells, derricks and cranes. All your distributor needs besides the name *Tuffy* is the diameter and length.

Tuffy DOZER ROPE

Increase your dozer rope service by mounting a 150' reel of Tuffy on your dozer. Feed through only enough to replace section damaged on the drum. Available in ½" and 9/16".

Tuffy SCRAPER ROPE

Flexible enough to withstand sharp bends . . . stiff enough to resist looping and kinking when slack!

Tuffy DRAGLINES

Maximum abrasive resistance, extra flexibility! Rides better on grooves, hugs drum when casting!

AMERICAN-LAFRANCE

DRY CHEMICAL EXTINGUISHERS

When fire hits, these new American-LaFrance Dry Chemical models are ready to stop it. Simply pull pin and squeeze lever. No gadgets to operate, no last minute pressurizing from a gas cartridge or cylinder, no inverting, no bumping, no shut-off nozzle on the hose needed. They're ready to go!

Their fire-smothering efficiency is aided by a scientifically designed Discharge Nozzle which fans the Dry Chemical downward in wide pattern and with great density. Their 150 (plus 25 minus 0) psi. air (or nitrogen) pressure maintains uniform duration of the Dry Chemical discharge pattern.

A glance at valve gauge indicates whether unit is in operating order. When partially operated, the extinguisher can be left standing without loss of air pressure, for use on a possible reflash.

The American-LaFrance Dry Chemical Valve is completely new also. It is ruggedly built. No special tools needed. Contains few parts. Equipped with Safety Relief Valve. Complete valve and siphon tube assembly removes as a single unit for recharging. They're watertight, and corrosion resistant. Tested for vibration and for operation at temperatures from minus 40° F. to plus 150° F. A Moisture Trap provides for pressurizing with air. Write for free illustrated literature.

Approved by Underwriters' and Factory Mutuals Laboratories for Class B and C fires

OUR 2nd Century of Leadership in FIRE PROTECTION

AMERICAN-LAFRANCE-FOAMITE Corporation

ELMIRA-NEW YORK-U.S.A.

IN CANADA, LAFRANCE FIRE ENGINE & FOAMITE LTD., TORONTO

ALFCO

You are cordially invited to visit our booths, No. 116 and 117.

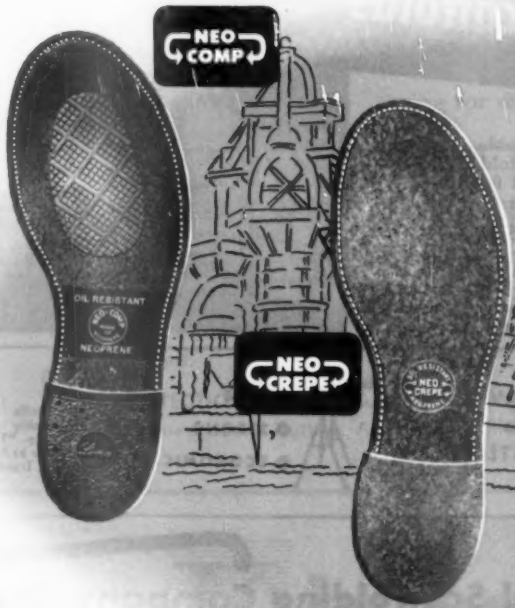
Look to Gro-Cord in '55

for the Newest and Latest Developments in Industrial-Workshoe soles

- *For Greater Safety*
- *For Greater Comfort*
- *For Greater Slip Resistance*
- *For Greater Resistance to Oil-Heat-Acids-Caustics*
- *For Greater Wear*

See 'em at the show

Booth 120 Conrad Hilton



GRO-CORD RUBBER CO.
LIMA, OHIO

Canadian Plant
GRO-CORD RUBBER CO. of CANADA LTD.
Tillsonburg, Ontario

PAINTING | CLEANING | ELECTRICAL WORK | INSPECTION | REPAIRS

Save 5 Ways Safely . . .

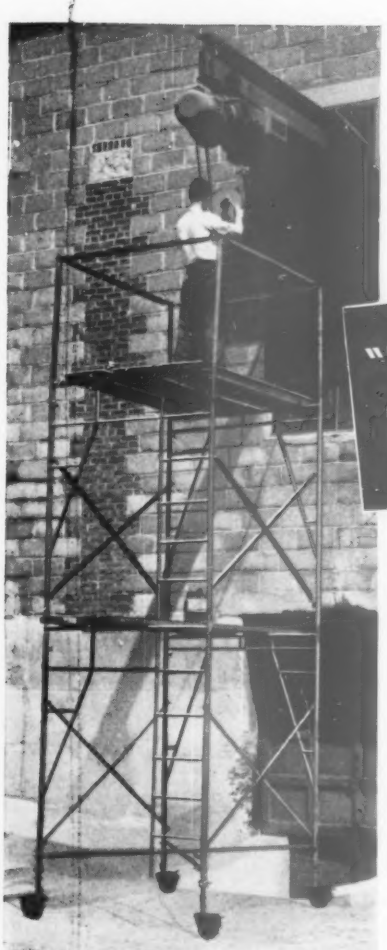
on Maintenance Work with

"TROUBLE SAVER"® SECTIONAL STEEL SCAFFOLDING

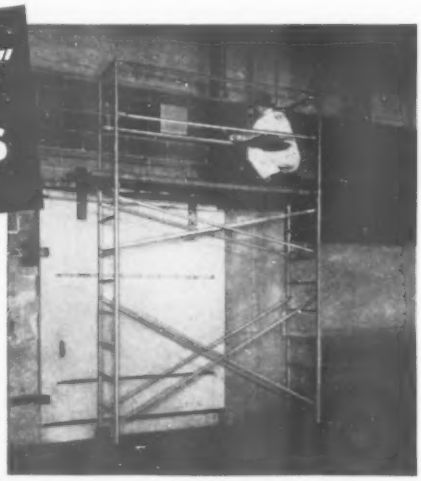
Simplify plant maintenance. "Trouble Saver" Steel Scaffolds assure greater economy and safety.

- **Scaffolding erecting and dismantling time is sharply reduced.**
- **Men do more and better work on firm, safe scaffolding.**
- **You protect workers against costly accidents.**
- **Less labor is required for any job.**
- **Convenient, efficient scaffolding cuts material waste.**

"Trouble Saver" Scaffolding is available in types and sizes for every maintenance need — *indoors or outside.* Write for Bulletin PSS-24 and Catalog M.



"TROUBLE SAVER" Rolling Scaffolds



Left: A typical "Trouble Saver" industrial rolling scaffold, equipped with casters, used for repairs and painting.

Right: "Trouble Saver" LADDER SCAFFOLDING — can be quickly put together from ladder units, 3', 5', 6'-6" or 10' high. Extension bases, 3', 4' or 5' wide are used for working at greater heights.

"TROUBLE SAVER" Adjustable STEEL TRESTLES

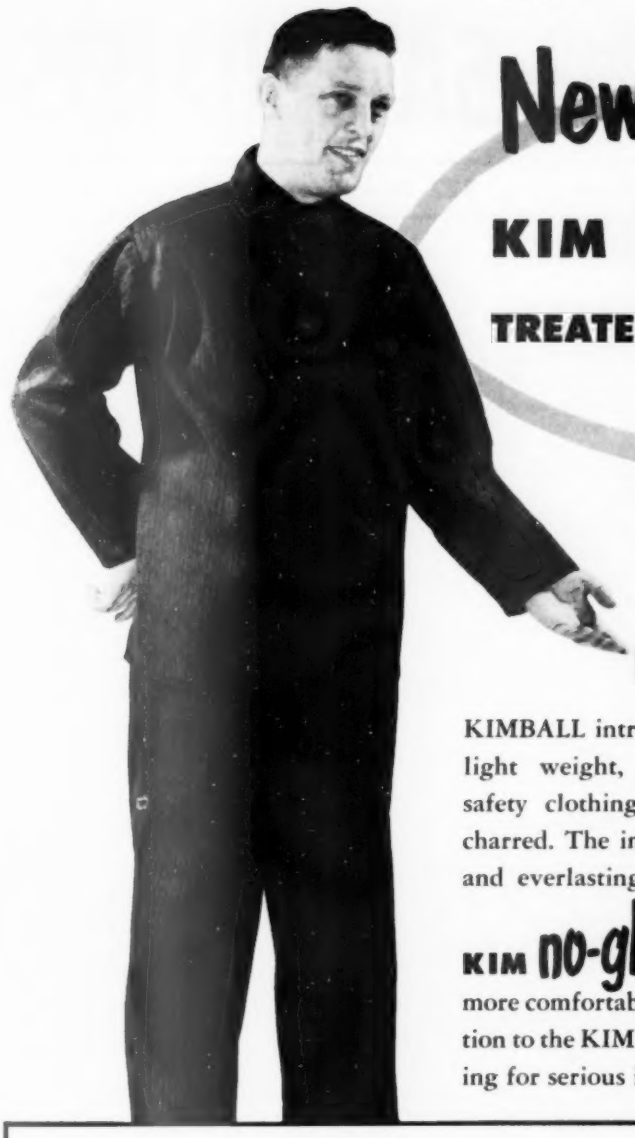
- **SAFE**
- **STRONG**
- **ECONOMICAL**

Details of the quickly adjustable "Trouble Saver" Steel Trestles.

VISIT OUR EXHIBIT
at the
National Safety Congress
Conrad Hilton Hotel, Chicago
October 18-22, 1954
Booth 97

The Steel Scaffolding Company, Inc.

856 Humboldt Street Dept. NSN Brooklyn 22, New York
Telephone: EVergreen 3-5510



New KIM no-glo TREATED COTTON FABRIC

for welding, scarfing and other light-hazard occupations

KIMBALL introduces KIM NO-GLO — the *durable*, light weight, comfortable, treated cotton fabric safety clothing which has no "after-glow" when charred. The impregnation compound is non-soluble and everlasting.

KIM no-glo fills the definite need for cooler, more comfortable safety clothing. It's a valuable addition to the KIMBALL line of ALL-WOOL safety clothing for serious industrial hazards.

KIMBALL SAFETY PRODUCTS COMPANY

OTHER KIMBALL SAFETY PRODUCTS . . .

EYE PROTECTION: Spectacle Goggles, Welding Goggles, Composition Goggles, Sideshields.

HAND PROTECTION: GLOVES: Welder's, Asbestos, Steel Stitched. MITTENS: Welder's, Asbestos, Steel Stitched.

BODY PROTECTION: CLOTHING: Wool, Flameproofed Cotton. LEGGINS and SPATS: Leather, Asbestos, Flameproofed Cotton. APRONS: Leather, Asbestos, Flameproofed Cotton.

Kimball SAFETY PRODUCTS COMPANY

9310 Wade Park Avenue • Cleveland 6, Ohio

SELLSTROM *Quality Eye and Face* SAFEGUARDS

Published by Sellstrom Manufacturing Company, 222 Hicks Road, Palatine, Illinois

Sensational New "Aluminum" Welding Helmet Keeps Welder's Face as "Cool as a Cucumber"

No. 206 Helmet

For many years the fibre helmet was standard. Then the No. 230 Sellstrom Fibre Glass Helmet set the pace toward helmet improvement.

Now we announce the sensationally new No. 206 Aluminum Welding Helmet. This aluminum helmet offers advantages so outstanding and so desirable that before long the entire welding industry can adopt this helmet as the greatest favorite among welding helmets.

Just consider these favorable facts:

1. A sheet of aluminum is laminated to the formed fibre base. All edges are rolled and completely sealed against possible sharp edges. The aluminum is covered with an extra protective coating. The design is "Patent Applied For."
2. Aluminum is a natural and positive heat reflector. It "throws back" the heat. It acts as a barrier against heat. It keeps the welder's face as "cool as a cucumber."
3. Here are tests which prove its heat-resisting qualities. These tests were made by a testing laboratory and the findings are therefore accurate as well as official.
   a) The heat source was two inches from the helmet. With generated heat at 295 degress Fahrenheit outside the helmet, the uncoated fibre helmet registered 201 degrees Fahrenheit inside the helmet while the aluminum helmet registered only 107 degrees inside the helmet.
   b) With generated heat at 400 degrees Fahrenheit outside the helmet, the *uncoated fibre* helmet burst, shattered, fell apart, while the *aluminum* helmet after ten minutes of 400 degree heat on the outside registered only 141 degrees on the inside.
4. Aluminum does not absorb moisture. Therefore this helmet cannot be otherwise than long-lasting and it will not lose its shape.
5. This Sellstrom No. 203 Aluminum Helmet offers all the desirable features of other first class helmets yet is no more costly than a fibre helmet of good quality.
6. Your choice of the Standard Front Loading or the "Lift Front" plate holder. Your choice of the Standard or the Sel-O-Matic headgear. Both the plate holders and the headgears are interchangeable. The same type bolts are used to permit a quick change at the welder's request or for any other reason.

This aluminum welding helmet is entirely new. Its production has been rushed to be ready for exhibit at the National Safety Show in Chicago.

All Sellstrom dealers should soon be able to make prompt deliveries of this helmet.

In the meantime, for your own benefit as well as ours, we ask that you help us to further test this helmet by permitting one of your welders to use it for a 30-day test period.

Simply write us on your letterhead, requesting that we ship you on memo a single helmet equipped with the famous Sel-O-Matic headgear and the "Lift Front" plate holder.

Test the helmet in your shop for 30 days. If after using this helmet for 30 days you do not find it the best helmet ever used in your shop, simply return it for credit.

If this helmet were not everything and even more than we claim for it, we would not dare to make this liberal offer on a nation-wide basis.

We suggest that you write us at once to forward a single helmet.

This One-Piece Eye Shield is Breaking All Sales Records

No. 39 Lucite Eye Shield

Never before have we offered an eye shield which so instantly leaped into nation-wide popularity.

This eye shield has its great appeal because it is extremely light weight, permits wide vision and has a patented rolled edge for real wearing comfort.

The .060 Lucite offers 92½% optical clarity by laboratory test—a greater clarity than clear glass.

Available in four sizes: 39-A, 4¾" lens. 39-B, 5" lens. 39-C, 5½" lens. 39-D, 6" lens. The 5½" lens should accommodate all present-day prescription spectacles but the 6" lens is offered for extra roominess if desired. In dozen lots we recommend 2 of 39-A, 4 of 39-B, 4 of 39-C and 2 of 39-D. Fitted with a flat elastic band.

Also available with a red lens for fluoroscopic work.

This eye shield renders real service in every industrial plant where there is an eye hazard. It is welcomed by workers because it is easy to put on or take off. Its very simplicity is largely responsible for its record-breaking popularity. We suggest that you order from your dealer or write us direct if he cannot supply this shield.

SEE US AT

BOOTH 31

National Safety Show

October 18 to 22 inclusive

CONRAD HILTON HOTEL

Chicago, Illinois

THIS IS OUR NEW SAFETY SIGNBOARD
WE WILL WELCOME YOUR SAFETY SLOGAN TO USE HERE
THANKS ILP
TO ENJOY TOMORROW PRACTICE SAFETY TODAY
THE SAFETY SCORE
TOLEDO 125 SAFE DAYS
LIMA 345 NO ONE 181
LATONIA 171 NO TWO 38
Intriguing Newness of Constantly Changed Messages is the Answer to—
YOU HAVE TO SEE TO ENJOY T V! PROTECT YOUR SIGHT!
THE SAFETY SCORE
TOLEDO 136 SAFE DAYS
LIMA 356 NO ONE 192
LATONIA 182 NO TWO 46
SOHIO WELCOMES TEACHERS B I E DAY HAVE A SAFE VISIT!
THE SAFETY SCORE
TOLEDO 138 SAFE DAYS
LIMA 358 NO ONE 194
LATONIA 184 NO TWO 48
MORE EFFECTIVE SAFETY SELLING
WAGNER ENDURONAMEL* CHANGEABLE COPY DISPLAYS
Copy can be changed in a few seconds, and without the use of ladders.
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MANUFACTURING DEPT. SAFETY SCORE
TOLEDO 144 SAFE DAYS
LIMA 366 NO. ONE 200
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Finished in a newly developed baked enamel which is
• CHIP-PROOF
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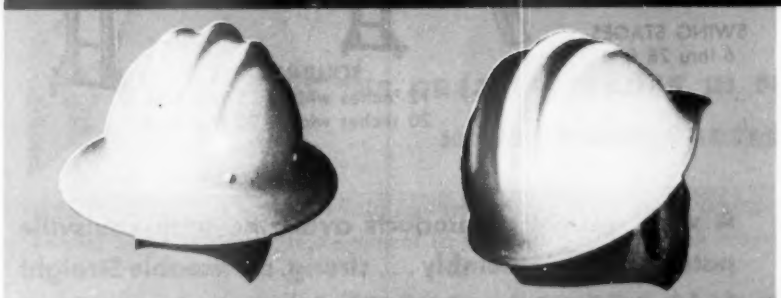

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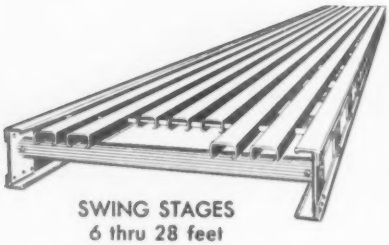
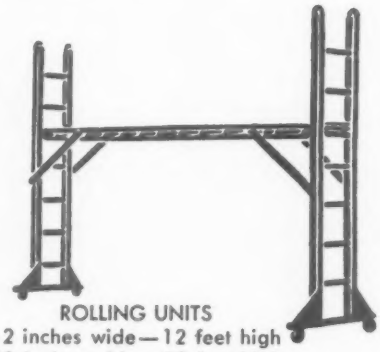
BOOTH 226



SWING STAGES
6 thru 28 feet



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A central sprayhead supplies clean tempered running water to each person . . . There are no faucets to touch or maintain . . . The bowl is self-flushing to prevent collection of contaminating water . . . Foot-control eliminates water waste, too, because water supply is automatically cut off . . . Only three piping connections are required for a Bradley that serves up to 10 washers simultaneously,—reducing installation costs.

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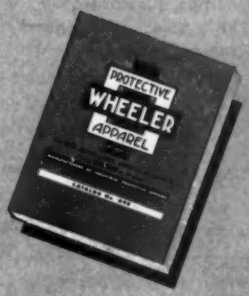
Our complete catalog gives styles, and specifications on our complete line. Send for your copy and make it your safety clothing bible.



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AB-113

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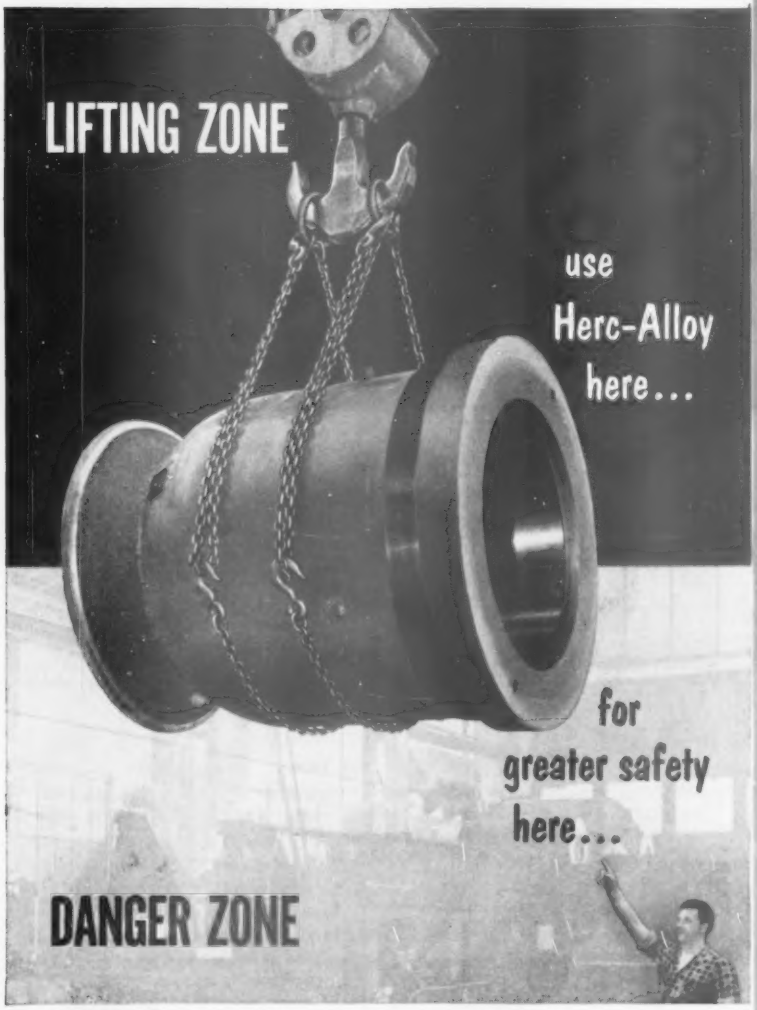
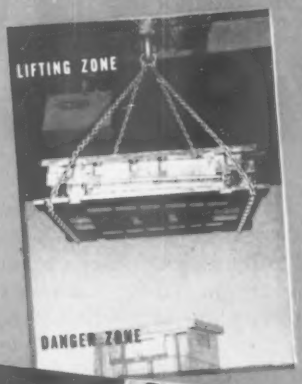
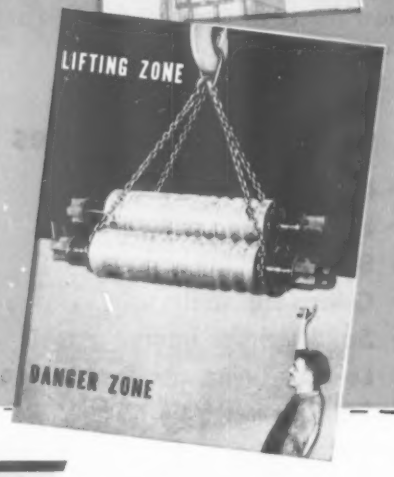


give extra protection to men and materials in the Danger Zone





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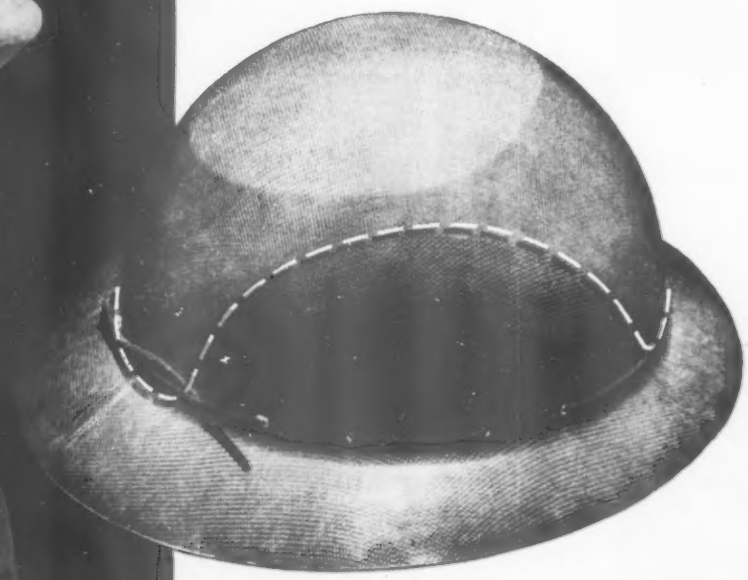

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EFFICIENT CLEANSING. Workers like Pax because it does the job of really getting the hands clean of industrial soil. No second washes necessary. Pax does it in one "shot."

FOR YOU it means savings because it takes less cleanser to do the job. For instance, one nation-wide user* reports they get 97 washups per dispenser full as compared to 50 washups for ordinary cleansers.

SPEED. Pax's speed is appreciated by workers. It lets them get through their quitting time washups fast and on their way home in a hurry!

FOR YOU . . . a bonus in higher worker morale, less washroom jams . . . less griping.

SKIN CONDITIONING ACTION. Workers are quick to notice that Pax-Lano-Sav Heavy Duty never dries the skin. Mild Pax with its special blend of emollients including lanolin stays on the skin after washing, leaving it ever softer and smoother.

FOR YOU it means more savings because it takes less cleanser to clean smooth, soft skin and it gives maximum protection against dermatitis.

MILLIONS USE PAX IN THOUSANDS OF PLANTS. Use of Pax by these workers is more than just acceptance, it's downright enthusiasm. Many write us telling how much they like it, others buy it for use in their own homes.

FOR YOU . . . this tremendous sales volume makes possible low cost volume manufacture of Pax. You get top quality at a lower cost per scrub up than what it would cost should you purchase a "bargain" brand cleanser.

ACCEPTED COMMITTEE ON COSMETICS AMERICAN MEDICAL ASSOCIATION

Pax-Lano-Sav"Heavy Duty Granulated Skin Cleanser has been awarded the Seal of Acceptance of the Committee on Cosmetics of the American Medical Association.

Pax produces also a complete line of many types of specialized skin cleansers, dispensers, maintenance and metal cleaners. Distributed nationally through Pax Warehouses and Jobber Stocks. Write for the name of your nearest distributor.

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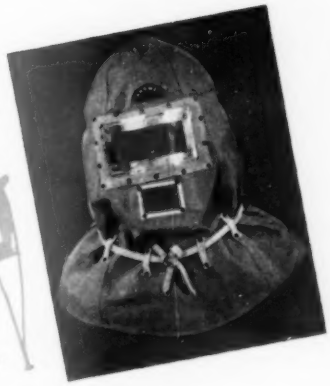

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. . . Order some Scott Air-Paks and get those repair jobs done in hours instead of days"

Ed: Right! The man hours we've already lost would pay for a carload of SCOTT AIR-PAKS. We can't afford to slow up production any longer just because our maintenance men don't have efficient breathing equipment.

S.D: We certainly can't. It took too long to clear out the fumes so that our men could make the repairs in safety. If we had SCOTT AIR-PAKS, our men could have gone into those fumes and finished the job in a few hours!

Ed: That's right . . . and our safety men tell me SCOTT AIR-PAKS can be put into operation on the double . . . plus the fact that they have the *lowest operating cost* of any breathing equipment.

S.D: How soon can we get SCOTT AIR-PAKS here so this won't happen again? We've got to maintain continuous production.

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SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

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For protection against falling objects and other sudden impact, and against bumping the head in close quarters, the new Jackson Safety Hats are a *safe* and *sound* investment.

Made of fiber glass plastic, the strongest protective material per ounce of weight, these safety hats surpass all known industrial requirements. They comply with Federal Specifications GGG-H-142b when tested for *electrical resistance*, *impact* (the 8-lb. ball test), *penetration* (the 1-lb. plumb bob test), *flammability*, and *water absorption*. At 14 ounces, *weight* is well below the specified limit.

Two types are available: the full-rimmed *Hat* and the *Cap*, with visor only. Unless otherwise specified, they will be furnished in an attractive, bluish grey.

ALSO FOUR OTHER STANDARD COLORS . . . White, Yellow, Green and Brown

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Plastic Headband allows immediate, positive adjustment, is clearly marked in hat sizes, holds its shape, and gives firm fit on all sizes of heads.

Straps of webbing button to inside of hat shell, and provide adjustable support on top of the head. They provide the required safe distance between top of head and hat shell and leave ample room for ventilation all around.

JACKSON SAFETY HAT — TYPE SH-1

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Arc-Welding Helmet, type H-1, pivoted to standard grey Safety Cap. Both are fiber glass of matching design and color. Visor is worn in back.

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Lift-Front Helmet, type H-2, permitting work inspection without raising of entire helmet, pivoted to Safety Cap. Units are detachable without tools.

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Where it is necessary, we offer consultation with specialists. Complete chemical and bacteriological analysis.

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Let's see how WEST products control dermatitis

West's complete line of sanitation products includes hand cleaners, protective creams, antiseptic soaps and protective garments. Everything you need for effective control of dermatitis. Here are a few of them.

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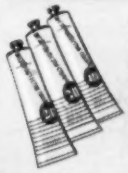

contain bacteriostatic properties. Formulated to provide protection against almost every occupational hazard. Used by thousands of workers throughout the United States and in Canada.

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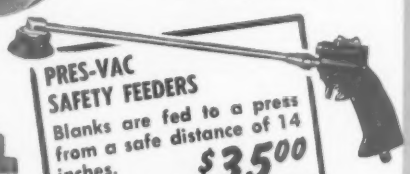

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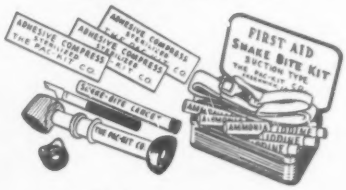

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- Ends the menace of slippery floor accidents. Contains a higher degree of *slip-resistance* than is required by Underwriters' Laboratories. Protects you against law suits—absenteeism—work slowdowns caused by that "tired feeling" that comes from shuffling across unsafe floors.
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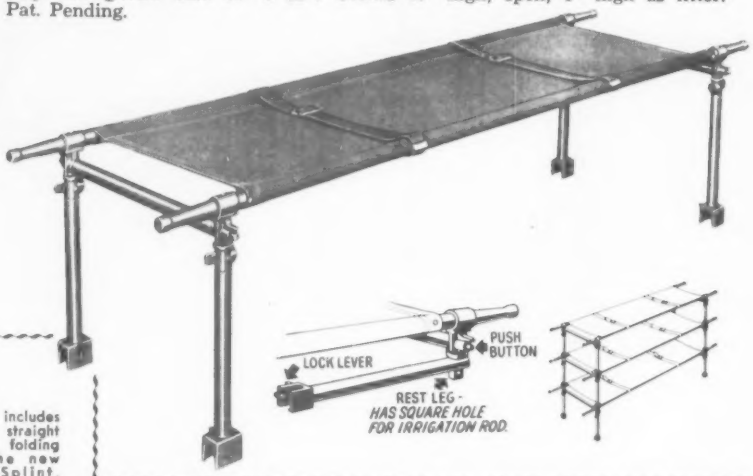

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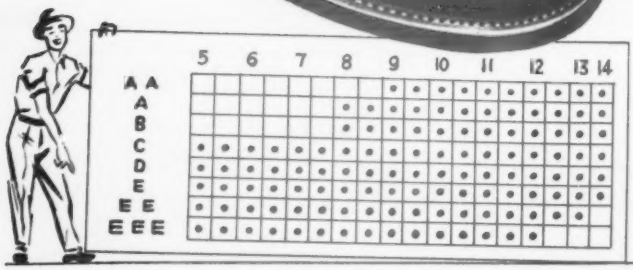

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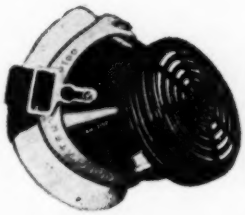

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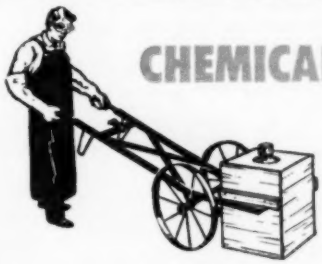

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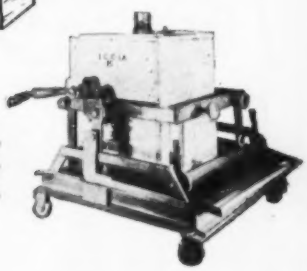

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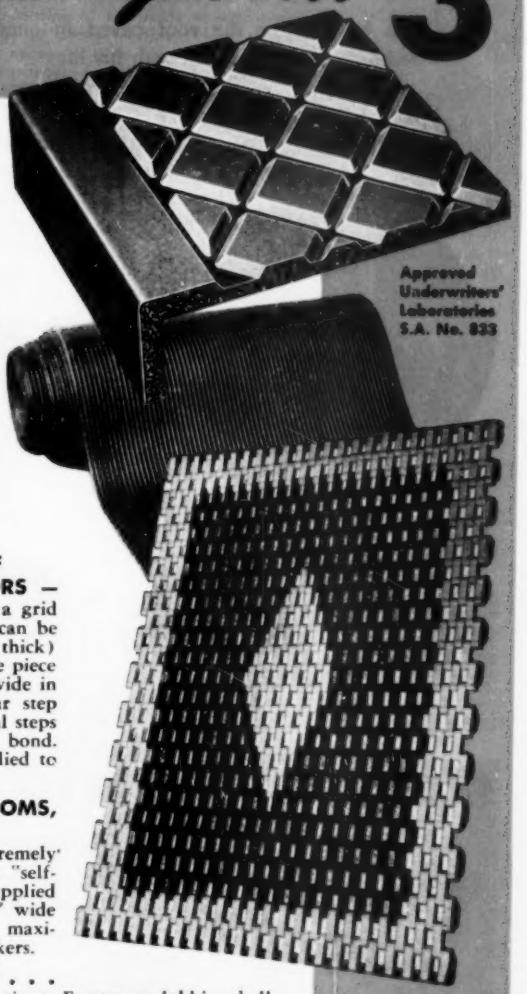

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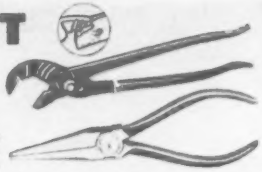
Semi-Floating Safety Tool Belt — 20 Styles — Full Range of Sizes. Stock.

Tool Belt with or without holster with tape sling, hammer loop, snap. Stock.



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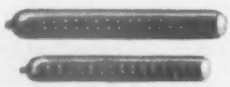

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CLEANS AND MISTPROOFS

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WHAT SEECLOTH IS:

SEECLOTH is a chemically treated fabric which when rubbed on glass both cleans and prevents fogging or misting. It has found use in industry as a convenient method for cleaning and preventing the fogging of goggles of workers who must protect their eyes in various industrial operations.

ECONOMICAL:

It is the most convenient and economical method known for this purpose. One piece (8" x 9") will last for a number of months when used on goggles or glasses.

INCREASES WORKER SAFETY:

The fact that the worker has the means for preventing misting of his goggles right on the job increases the safety of the operation since it reduces the temptation to continue to work with misted glasses. He can fogproof them without leaving his work.

HOW TO USE SEECLOTH:

All that is necessary is to wipe the dry or very slightly moistened glasses with the dry **SEECLOTH** and thus mistproof the glasses for a considerable period.

OTHER USES:

SEECLOTH has also found use in preventing misting of the inside of windshields in foggy or damp weather. Here also all that is necessary is to rub the dry or very slightly moistened glass surface with the dry **SEECLOTH.** Mist will then not form on the area that is rubbed. Other applications include its use on spectacles, mirrors, windows, etc.

HOW SEECLOTH IS PACKAGED:

3" x 8" pieces (not individually packaged). Suitable for eyeglasses and may be kept in the case with the glasses. 8" x 9" pieces (individually packaged in 3½" x 6" polyethylene envelopes). Suitable for goggles and masks and fits easily in the pocket of coveralls. 16" x 18" pieces (individually packaged in 5" x 10" polyethylene envelopes). Suitable for automobile windshields, household use, etc., and fits comfortably in the glove compartment of a car or in the drawer of a kitchen cabinet.

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reported by plant managers, after installing tests to make sure each employee's eyes are *working efficiently TOGETHER.*

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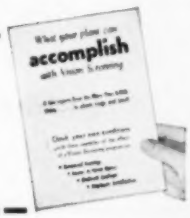

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Please send me more information on Franklin floor maintenance materials.
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THE SOLUTION TO AN OLD INDUSTRIAL PROBLEM

Contact Dermatitis

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CLEREX—a gel which protects the skin against organic solvents. Forms a continuous, strong elastic skin-adherent film which does not interfere with tactile sensation. The film is insoluble in all anhydrous organic solvents, such as the hydrocarbons (benzine, benzol, toluene, gasoline, varsol, turpentine, kerosene, solvent naphtha), the chlorinated hydrocarbons, nitriles, and the polymerizable monomers (styrene, acrylonitrile, and unsaturated esters for producing polyester resins). Used in making and using paints, varnishes, plastics, polyester resin—fiber-glass compositions, lacquers, inks, and in metal degreasing using trichlorethylene. Washes off with soap and water.

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HYDREPEL-A is a protective cream which forms a film on the skin, protecting it against water solutions. A plasticized ethyl cellulose-castor oil composition in a vanishing cream base, it adheres to the skin in spite of washing with soaps, detergents and water. It resists weak acids, alkalis, aldehydes and water solutions of salts and other water soluble compounds. It may stay on the skin for long periods if desired—without removal. Easily removable by an alcohol solution—HYDREPEL REMOVER.

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for scrubbing and maintaining floors of all kinds and for scores of other dust-control and clean-up jobs.

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Available in the two types pictured above . . . with plain handle or with tank on handle to carry 3 gallons of soap and water. Easily interchangeable attachments to scrub, wax, polish, buff, sand, grind or steel-wool floors of all kinds. All models have the HILD Safety Switch and larger models have handles adjustable to operator's height. Six husky models with brush spreads from 11 to 19 inches. HILD Equipment keeps factory floors clean, smooth and slip-safe . . . prevents accidents, speeds up plant traffic and improves employee morale. Special attachments for removing rough, bumpy, hard-caked grease and for cleaning oily, slippery floors.

HILD Portable Vacuum for dry work only

A powerful, sturdy, low-cost machine. Numerous attachments enable this machine to do scores of clean-up jobs. Newest type ⅜ H.P. hi-speed motor. Rubber motor mountings smother noise. Handles easily . . . tracks perfectly. Operates on 115 volts A.C. or D.C.

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SEE DEMONSTRATION of HILD EQUIPMENT in BOOTH 130 OCT. 18-22 CONRAD HILTON HOTEL

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For use with HILD Model 115 Vacuum or with other industrial vacuums. Adds 15 gallons wet capacity. Available as shown, mounted on wheel carriage. Also available minus wheel carriage . . . can be placed with vacuum on hand truck for convenient handling as a single unit.

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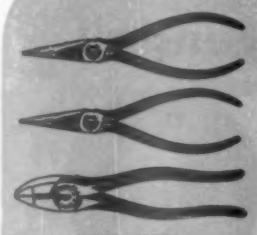
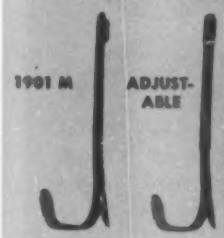


KLEIN PLIERS



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We are proud that the equipment produced by Mathias Klein & Sons has played a part in setting new safety standards. The general acceptance of Klein equipment today is the result of the quality that has been associated with the name Klein "since 1857."

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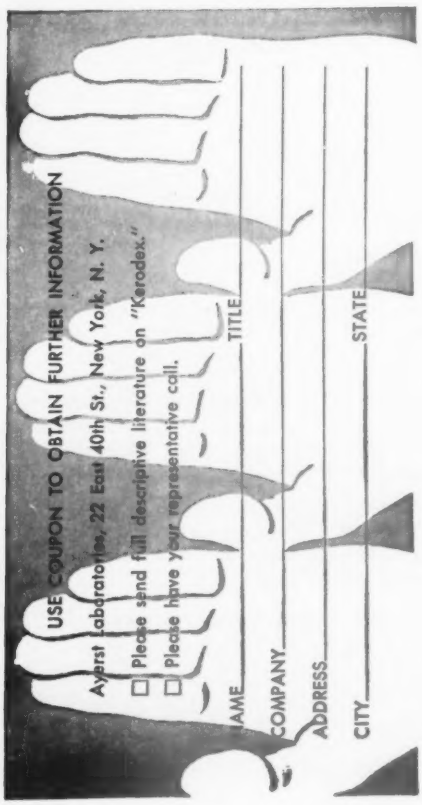

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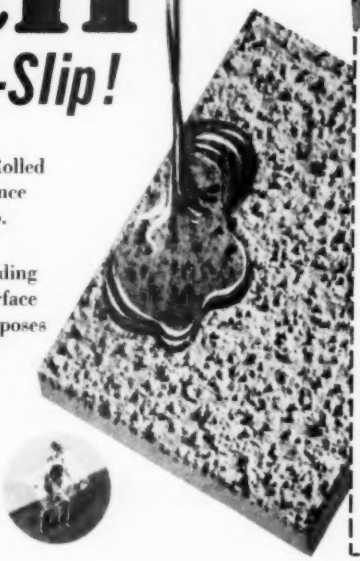

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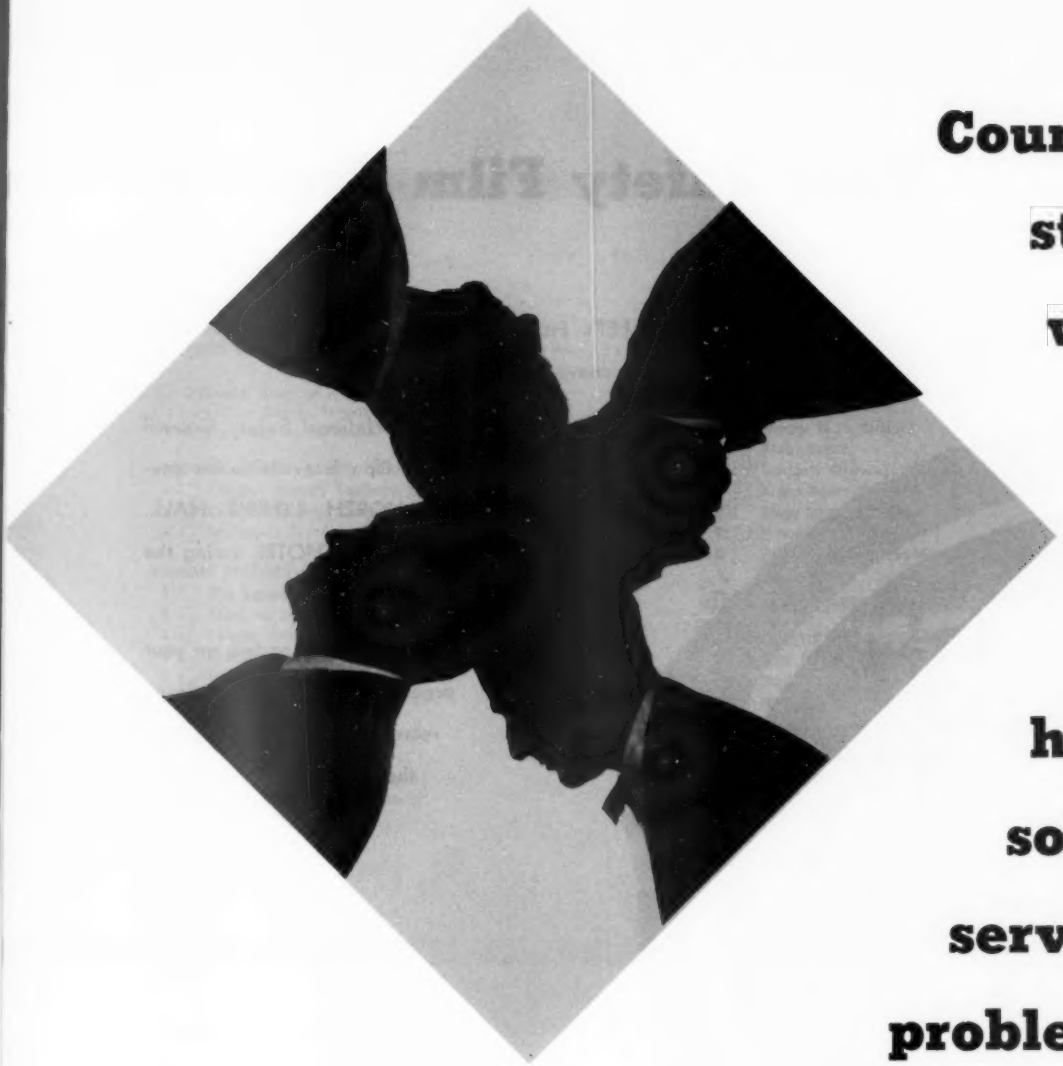

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Staff service consultants will be on hand to help you work out the answers to such problems as:

- supplying adequate technical and program materials
- establishing effective training courses
- selecting training aids
- using safety incentives to stimulate interest

If you have a service problem that you have put off writing about—let's talk it over. Drop by and tell us how we can serve you better.

Your Safety Film Preview

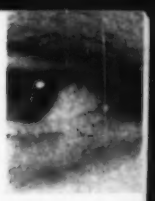
82 SAFETY FILMS await your selection—for showing at your convenience.

A complete library of National Safety Council occupational safety films is available for preview in the NORTH EXHIBIT HALL, CONRAD HILTON HOTEL during the National Safety Congress.

Pick an open spot or two on your program and plan to sit down, relax, and bring yourself up-to-the-minute on Council films.

PREVIEW HOURS: Monday, 10:30 a.m. to 5:00 p.m.; Tuesday through Thursday, 9:00 a.m. to 5:00 p.m.; Friday, 9:00 a.m. to 12:00 Noon.

SPECIAL SHOWING—A wonderful new color film—ANYONE AT ALL—produced by Encyclopaedia Britannica Films, will be previewed at 2:00 p.m. Monday through Thursday.



supervisor training

- ☐ O'Grady Goes to A Safety Meeting*†
- ☐ Pick Your Safety Target*†
- ☐ A Gray Day for O'Grady*†

SUPERVISING FOR SAFETY SERIES
- 1 ☐ Fragile—Handle Feelings With Care*†
- 2 ☐ Call 'Em on the Carpet*†
- 3 ☐ It's an Order*†

HUMAN FACTORS IN SAFETY SERIES
- 1 ☐ The Secret of Supervision†
- 2 ☐ Teaching Safety on the Job†
- 3 ☐ People Are All Alike†
- 4 ☐ Everybody's Different†
- 5 ☐ Teamwork for Safety†
- 6 ☐ Safety Case Histories†

SPEAKING OF SAFETY SERIES
- 1 ☐ The Power of Speech†
- 2 ☐ Butterflies In Your Stomach†
- 3 ☐ The Key to Good Speaking†
- 4 ☐ On Your Feet†
- 5 ☐ Now You're Talking†
- 6 ☐ Ring the Bell†

SAFETY MANAGEMENT FOR FOREMEN SERIES
- 1 ☐ Follow the Leader†
- 2 ☐ Cause and Cure†
- 3 ☐ Guard Duty†
- 4 ☐ Safety Is In Order†
- 5 ☐ Right Dress†
- 6 ☐ Doctor's Orders†
- 7 ☐ Brain Beats Brawn†
- 8 ☐ Stop, Look and Listen†
- 9 ☐ Principles and Interest†
- 10 ☐ Production With Safety†

driver training

THE PROFESSIONAL SAFE DRIVING SERIES
- 1 ☐ Skill Is Your Business*
- 2 ☐ The Champ Becomes Deaf and Blind*
- 3 ☐ Ninety-Day Flash*
- 4 ☐ Watch Your Handicap*
- 5 ☐ Take A Look At The Odds*

- ☐ Smooth Operation*†
- ☐ Defensive Driving†
- ☐ It It Happens†
- ☐ P. U. D. Driver Wins Again†
- ☐ Pilots of the Highway†

employee training

- ☐ If You Took Your Family To Work*†
- ☐ Take Time To Live*†
- ☐ An Accident Happens to Sam*†
- ☐ You Can Take It With You*†
- ☐ Safe As You Make It*

PERSONAL SIDE OF SAFETY SERIES
- 1 ☐ Safety Record*†
- 2 ☐ 2 Steps to Safety*†
- 3 ☐ Let Habit Help*†
- 4 ☐ Get A Grip On Yourself*†
- 5 ☐ Decide To Be Safe*†

WORKER TRAINING COURSE
- 1 ☐ Fifteen Minutes To Go†
- 2 ☐ No Laughing Matter†
- 3 ☐ Safe Handling of Materials†
- 4 ☐ What's Your Safety I.Q.?*†
- 5 ☐ Stop the Fire Thief*†
- 6 ☐ Safe In Hand†
- 7 ☐ Keep It Clean†
- 8 ☐ Easy on the Eyes*†
- 9 ☐ Learn and Live†
- 10 ☐ Cause and Cure†

- ☐ Cause for Alarm*†
- ☐ Freight Handling Safety*†
- ☐ My Eye Deal†
- ☐ Fire†
- ☐ Grime Doesn't Pay†
- ☐ Handle With Care†
- ☐ Open For Infection†
- ☐ Rules For Tools†
- ☐ Safe All Around†
- ☐ The Fall Guy†
- ☐ Minute Men†
- ☐ Woodworking Machines†
- ☐ Laboratory Glassware†
- ☐ Giant Hands of Industry†
- ☐ Construction Equipment Safety†
- ☐ For Safety's Sake*
- ☐ Men and Motive Power†
- ☐ Men of Maintenance†
- ☐ Keep 'Em Rolling†
- ☐ Safely We Work†
- ☐ Operating Heavy Duty Trucks Safely†
- ☐ Sawmill Safety†
- ☐ Timber†
- ☐ Woven With Safety†

*16mm sound motion films. †35mm sound slidefilms. For description of these films, see Service Guide 2.1, Occupational Safety Services, or the National Directory of Safety Films.

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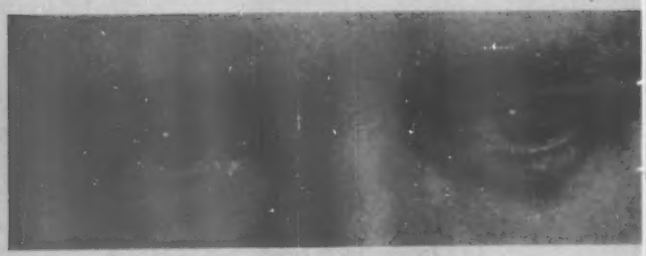
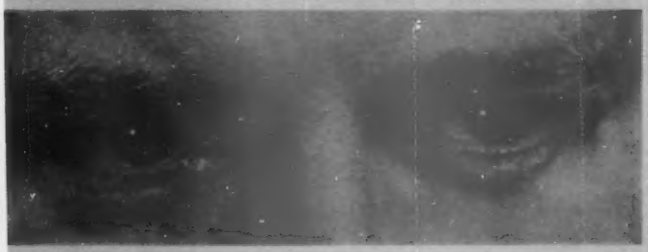


National Safety Council



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Used in wide variety of applications throughout industry

Improve workers' safety . . . health . . . comfort . . . efficiency

VANO DESIGN "A" VENTILATOR is used here during repairs to a chemical still. This type ventilator is used to ventilate tanks, tank cars, drums, vats, underground cable manholes, pipe galleries, airplane wing compartments, fuselages and other confined places. Uses 8" diameter flexible canvas tubing ("Ventube").

VANO DESIGN "B" VENTILATOR here discharges welding fumes from double-bottom compartment in naval vessel under construction. Large volume of air handled quickly expels fumes and results in good ventilation. Vano Design "B" can pass through opening only 14" in diameter. Uses 8" diameter flexible canvas tubing ("Ventube").

VANO DESIGN "C" VENTILATOR here withdraws fumes from a reactor kettle. This ventilator can be furnished with 8" suction inlet for 8" non-collapsible suction tubing — or multiple inlet nozzles for 5", 4", and 3" suction hose. The discharge may be connected to 8" "Ventube." Capacities furnished on request.

NO. 2 AEROPLANE HEAT KILLER here directs cool, fresh air on worker in drop forge plant. Heat killers restore workers' efficiency by providing extra ventilation in the hot months, or on any job where workers are continually or periodically required to work in excessive heat. Available in two types, three sizes in each.

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PORTAIR NO. 4 BLOWER EXHAUSTER exhausts fumes resulting from soldering, welding, tank coating, is also used in ventilating small tanks. It is designed to permit attachment of 4" flexible metal hose. Capacity: 425 CFM free air.

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Write here any special ventilating problem you may have { _____ _____

SAFETY NEWS

THE COVER: The famous lions in front of the Art Institute on Michigan Avenue are a familiar sight to Congress delegates. This striking night scene is by Jim Lehman, NSC staff photographer.

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34,600 copies of this issue were printed.

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MSCO *Specialists in unit first aid*

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national
SAFETY NEWS
OCTOBER 1954

"The Eager Minds"

QUITE appropriately, an event of unusual significance will be celebrated during the week of the 42nd National Safety Congress —Light's Diamond Jubilee.

On October 21, 1879, Edison demonstrated the first practical incandescent lamp in his laboratory at Menlo Park, N. J. That event meant far more than the introduction of new light source; it marked the beginning of a new way of life for the world.

There was nothing new about electricity in 1879. The ancients knew quite a bit about it but didn't know what to do with it. Early 19th century scientists had made some progress in putting it to work but most of the discoveries were still laboratory curiosities.

The electric arc lamp was already in use. Several years before, Sir Joseph Swan had designed an incandescent lamp that actually worked but it had a short life and was expensive to manufacture.

With the incandescent lamp, as with many other discoveries, the principle was already known waiting for some practical genius to put them to work.

The genius was Edison. His great contribution was to make discoveries practical for every day use and to keep adding refinements of design and construction that increased their usefulness.

The incandescent lamp was not the only product of that eager, tireless research at Menlo Park. From it came also the improved methods of generating and distributing the current that provided "light for freedom—power for progress."

And from this research developed the science of electronics so vital to communications and to an increasing number of industrial operations. It paved the way for the atomic age.

Other "eager minds"—to use the title of a motion picture recently released by the electric industry—have continued to work on basic inventions. Frequently we hear the lament that there are no more great inventors—that men like Edison, Tesla and Steinmetz will never live again.

That may be true. But it is largely because of changed methods of operation rather than any shortage of eager though anonymous minds.

Today, inventors work in teams—in industries and in research laboratories, with amazingly complicated and accurate equipment. What wouldn't Edison have given for the facilities of a great modern laboratory? And for a staff with the training available today?

While at the National Safety Congress, just look around for illustrations of the significance of Light's Diamond Jubilee—beyond the obvious ones of light for meeting rooms and projectors. And throughout the Exposition there will be numerous examples of safety's dependence on electricity.

Plan Today for a Safe Tomorrow

By CLIFFORD F. HOOD

FOR several days my thoughts have been more or less centered on this vital meeting. It will not surprise you, therefore, to learn that I have considered several matters from which dreams are made, all concerning this meeting of the Minnesota Safety Council and the Governor's Safety Conference which preceded it.

On Monday of this week, after sitting in on a series of meetings in New York, and attending to a number of business problems, I flew back to Pittsburgh. It was late in the evening and my thoughts drifted to your forthcoming meeting. For a while, I dozed off and various thoughts raced through my subconscious mind.

In this dream, I met a gentleman just outside the Hotel Duluth. He had an ageless appearance and carried a queer-looking camera with which he wanted to take my picture. It was not an ordinary camera, he told me, but one that pictured people and events during the next 25 years, revealing the shape of things to come even in the year 1979.

While my curiosity was more than ordinarily aroused, he further beguiled me with a print taken from his pocket. I was startled but pleased, for having entertained the thought of doing a little fishing in these parts, there I saw a photograph of myself . . . standing on the shores of Lake Superior . . . holding a trout in each hand . . . and while my arms were outstretched, the tails of the fish dragged on the ground.

Naturally, I consented to look through his album of photographs of the future. On the first page was a picture of Governor Anderson. There he stood, dignified and distinguished, somewhere in his early sixties. And, incidentally, he was on the steps of a capitol building which I was not quite able to identify.

On the second page was a photograph of a learned judge, and the name beneath the photo said Judge Luther W. Youngdahl. On the opposite page was a picture labeled, "The Governor's Safety Consultant." It was, of course, your Council's president, Art Rohweder, whose service to Minnesota and safety has long been a source of pride to United States Steel.

And, of course, I could not overlook the print of that very wonderful lady and staunchest of safety advocates, Mrs. George Welles, who has acquired a national reputation through her work in home and school safety throughout this area and as a Board Member of the National Safety Council.

Then, as we went further into the album, there were many photographs of Duluth, showing the astounding progress made in this city. In fact, the album was filled with pictures which seemed to move before our eyes and show an almost unbelievable world of tomorrow—where safety had reached the heights which you are working to achieve.

The discoveries of today—atomic power, solar energy, magnetic propulsion, interplanetary flight—were realities. And I found myself hearing the

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CLIFFORD F. HOOD *is President, United States Steel Corporation, Pittsburgh, Pa. This article has been condensed slightly from an address before the Minnesota Safety Council, August 20, 1954.*

Here is an imaginative and intriguing picture of a future that might be, and, we hope, will be. The time to start working for it is now

words of your speaker at the Minnesota Safety Council meeting in 1979. He said:

"We have made considerable progress, safety-wise since those early years of the nineteen-fifties. Five or six weeks ago, for example, while looking through the back pages of the evening paper, I came across a short—almost hidden—article containing National Safety Council accident figures for the Fourth of July weekend. The Council recorded only about a dozen accidents—quite a reduction from the three or four hundred fatalities which were common on such a weekend in the early 1950's.

"These statistics reflect the many advances made in transportation. You will recall that we did not have atomic-powered engines on our railroads 25 years ago. Our modern 1979 trains also have special cars of electronic controls to check all moving and vital parts. Nothing occurs throughout the entire length of the train, and even many miles along the tracks ahead, that is not instantly relayed to the chief train engineer. I understand that now there is not a railroad grade crossing within 100 miles of this city. And in those few rural areas where they do exist, many lives have been saved by the installation of radar equipment which activates crash-proof barriers when a train approaches and automatically begins to apply automobile brakes within 200 feet of the crossing.

"Here in Duluth" your speaker continued, "your elevated sidewalks—some of them being the safe and convenient continuously-moving variety—have eliminated pedestrian and traffic problems. I have been told that your city is also testing the new chemically activated device which prevents the operation of an automobile when alcohol on the driver's breath indicates that he may be intoxicated.

Starting Them Young

"I could go on and on, mentioning extensive efforts in farm safety and your campaigns which have almost eliminated hazards in Minnesota homes. Certainly the past 25 years have witnessed spectacular safety advances growing out of the Governor's Safety Conferences and the work of this Council."

Then as the mysterious photographer turned the pages of his album, I heard your speaker continue: "As one who remembers safety performances 25 years ago, I am pleased to observe that we have finally succeeded in making safety a way of life in this nation.

"Children's games and books, with the accent on safety, start young minds concentrating on safe living. Preparation of the individual for life includes the teaching of safety in our schools, through all the grades, just like mathematics and grammar. A long-time industrial friend of mine remarked the other day that the young person entering industry in 1979 is equipped with a knowledge of safety that would have required years of industrial experience.

The Age of Automation

"But the greatest contribution of all has been made in the field of cybernetics, the science of articulation through automatic functioning and timing control—or as we used to say, automation. Up here in the taconite country, you should be most familiar with automation, particularly as it has been applied to the mining, processing and shipping of taconite.

"By the same token, it is a rewarding experience to those of us who have been around a few decades to see our automatic steel plants in operation, and recall how the first suggestion to facilitate the manufacture of steel by the use of electronics was actually met with derision.

"Despite the fact that automation has made necessary a constant expanding of the labor force through the introduction of new industries and new facilities, production and a steady growth in our economy, our safety record in industry is almost perfect. I believe much of this can be attributed to the fact that the greater skills acquired by the employees and which are required to operate a modern plant have provided our people with a richer existence.

"But the price of this progress has been high to those who have made it possible. First came the men with imagination and the courage to be laughed at and even referred to as being a bit queer. And then came the day in this blessed land of freedom when their dreams blossomed into reality.

"Why? Only because a given problem was attacked from all angles and those processes which required change were changed until steelmakers of bygone years who returned later were heard to say, 'It just isn't possible to make steel that way.' Automation in the business of making and shaping the products of steel has practically eliminated human frailties—the causes of most accidents."

And as we reached the end of the album, I heard your speaker say:

"While the nation was concentrating on cradle to the grave security in the earlier part of this century, we have long since put aside those utopian dreams and have come to realize that security is the product of honest effort, and that originality and initiative should have precedence over conformity and group

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Aerial view of Miraflores Locks, Canal Zone.

The Safety Story of the Panama Canal

"The Land Divided The World United"

By GAYL O. KELLAR

AN interoceanic passageway between the Atlantic and Pacific oceans was a gleam in the eye of every major maritime nation for over three and a half centuries.

The history of the Panama Canal is known to date back at least to 1534, when Emperor Charles V of Spain, issued instructions to his Governor of Panama to survey the Panama route. A subsequent report that "all the gold in the world would not suffice for its execution with the labor then available" led to the abandonment of serious thought of a man-made channel for many years.

GAYL O. KELLAR is Chief, Safety Branch, Panama Canal Company.

The idea grew alternately hot and cold over the centuries, with the Panama route being one of many receiving serious consideration.

Since the history of the Panama Canal and the Panama Railroad Company are so closely interrelated that it is impossible to separate them, we would first like to tell you a little about the Railroad; particularly since the concession for its original construction gave the concessionaires veto rights over construction of any canal.

In 1850 three Americans, with a concession granted by Columbia and backed by a stock company incorporated in the State of New York, started construction of the transcontinental railroad on the Isthmus of Panama. This was strictly a business venture to cash in on a source of wealth that the region inherited with its geography—the transportation of persons and things across the narrowest strip of land on the Western Hemisphere between the Atlantic and Pacific Oceans.

Laborers were recruited in Columbia, Jamaica, England, Ireland, France, Germany, Austria, Africa, India and China, but "it was soon found that many of these were little adapted to the work."

Many legends have grown over the experiences of the early construction days of the railroad and it is impossible to separate legend from fact.

Incidence of malaria and other diseases was high and there are many references to the "appalling death rate" and its adverse effect on construction.

It may or may not be a fact that 1,000 negroes imported from the West Coast of Africa all died within six months; that of 1,000 Orientals imported from China, hundreds were overwhelmed with melancholy and committed suicide.

No mortality rates were maintained for dark-skinned workmen, but the records show that 293 white employees died from all causes during the construction years.

The maximum number of employees of all classes at one time is believed to have been 7,000. In January 1855, about four and a half years after the start of construction, the rails were joined from one side of the Isthmus to the other and daily trains followed soon after.

The early years of the Panama Railroad were destined to be prosperous and operations continued under the original company until acquired by the French Panama Canal Company in 1881. This was a necessary prerequisite to its right to begin construction of a Canal, the first stages of which were started the same year under the leadership of Ferdinand De Lesseps, who initiated the Suez Canal project.

The collapse of this French Company in 1889 has been variously ascribed to disease, mismanagement, extravagance, inadequate machinery, labor problems and technical incompetence. Formation of its successor, the New French Canal Company in 1894, did not meet with any greater success and in 1898 they gave up.

It is known that the mortality rate was excessive and from the best information available it is believed that the French lost 22,189 laborers by death from 1881 to 1889. With a total number of employees ranging from 928 in 1881 to a peak of 17,615 in 1884, or an average force of 10,200, this would

Public display of National Safety Council's Award of Merit won by Canal Zone Government and Panama Canal Company for 1953 record.

Overhauling the Gatun Locks, January 1951.

give a mortality rate of over 240 per thousand per year.

How many of these deaths were due to accident, yellow fever, malaria and other diseases, and how many were injured will never be known, but there can be no question that the toll was terrific.

On May 4, 1904, a half century ago, the Panama Canal was reborn as an American enterprise, when for the payment of $40,000,000 the United States purchased the rights and properties of the second French Canal Company, including their stock in the Panama Railroad Company.

Its completion ten years later in 1914 was hailed as one of the modern wonders of the world, not only for the engineering achievement, but for the conquest of disease in an area that had the reputation of being one of the most pestilential sections of the world.

The story of the construction of the Panama Canal is truly one of American initiative, ingenuity, ideals and dollars. Many names stand out and many men were made famous for their part in this great project, but to no one man or any single group can go full credit for its building.

The organization represented one of the greatest collections and most varied assortment of workers ever assembled. Included were skilled engineers of every class (except safety), doctors, nurses, lawyers, railroaders, steamshovel operators, school teachers, preachers, powdermen, file clerks, bookkeepers, skilled craftsmen of every craft, and pick and shovel laborers.

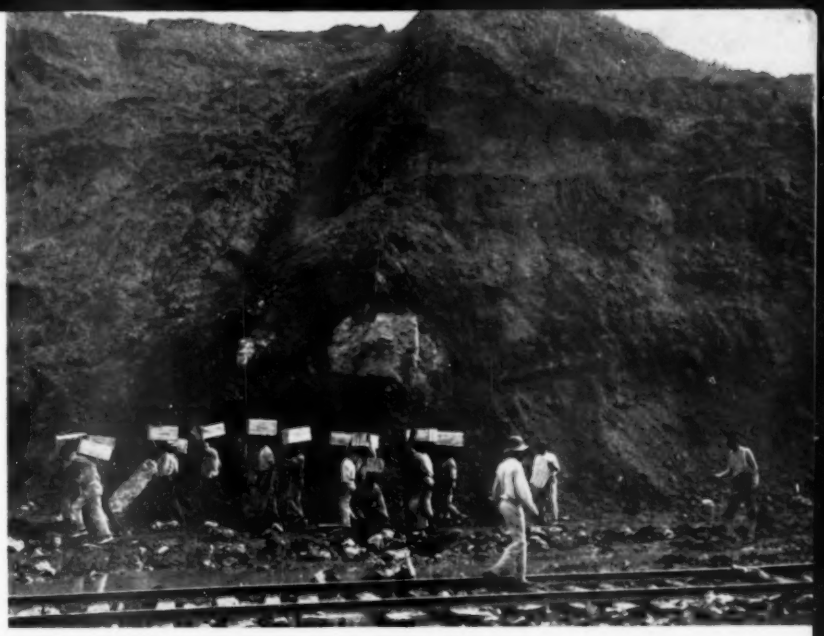
Left: Some of the tropical hazards are pictured in this Spanish poster. Below: Safety poster displayed by kindergarten students is a sample of safety work carried on in schools in the Canal Zone.

There was no pool of skilled or unskilled workmen on the Isthmus. Neither were there houses to shelter them nor food to sustain them.

Recruitment of a common labor force was a complex but not a difficult problem. Workmen by the thousands in the nearby West Indies, inured to tropical living, were ready for any kind of work at even subsistence level. Some 30,000 of these were hired under contract. They were supplemented by an approximately equal force of migrant laborers attracted by wages even then much higher than the general level in the area. To these were added over 10,000 contract workers from southern Europe, Spain, Italy and Greece, who proved to be diligent and effective workers.

Hiring and keeping a skilled force, however, was another matter and it was this type of employee most needed. Widespread unfavorable publicity throughout the United States concerning health and living conditions, coupled with criticism of the Canal project itself, hampered recruitment during the first two years and was a delaying factor in both planning and action.

Building the Canal involved three main problems — engineering, sanitation and organization, of which organization proved to be the most troublesome.



Protective equipment was scarce and unsafe practices were plentiful during the construction period. This picture was taken in January 1913 at the Culebra Cut.

Engineering problems were primarily ones of magnitude which could be solved by imaginative men.

Chiefly they involved at that time, excavating a passageway wide and deep enough to float the largest ships; constructing the largest earth dam ever built; creating the largest artificial lake in existence; building the most massive canal locks ever conceived; constructing the biggest gates ever swung; inventing and fabricating intricate electrical and mechanical equipment for operating the waterway; relocating a 50-mile railroad; and conquering landslides of monumental proportions.

Sanitation involved tasks of similar proportions. It required a general cleanup of a large area where yellow fever, malaria, dysentery and other tropical diseases had thrived for centuries.

It required the provision of a pure water supply; proper sewerage and drainage; mosquito, fly and other insect control; sanitary food handling facilities; adequate quarantine measures; hospitals to treat the sick and injured; doctors and nurses to staff them; and an unending fight against many malign diseases which thrive in the tropics.

This beginning of "The Land Divided—The World United," to state it mildly, left much to be desired, even for the *pioneers*. As to be expected with such a hodgepodge of nationalities, many of whom were rough-and-ready customers, seeking both adventure

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Drydock construction at Cristobal, C.Z., in pre-safety era, February 1933.

Firestone

SAFETY RULES

FOR CALENDER OPERATORS.

The following rules have been drawn up for your protection, and must be observed

1. HAVE YOU CLEARLY UNDERSTOOD OUR GENERAL SAFETY RULES?
2. Be sure you are thoroughly acquainted with safety devices and that they are functioning on your machine. Switch starting is mock.
3. Follow instructions of your foreman and your inspectors only.
4. Keep your mind on your job at all times, and give your work your entire attention.
5. Carelessness about your machine is important. Do not allow oil, grease, or other matter to collect on machines or floor.
6. No one should attempt to reach a piece on the roll up rollers or to offer stock on to a roll top. The safest method is to withdraw and then clean when a nearby stop has been set. Any other man encountering any fault in delivery or detail has been taught to attract the worker.
7. Care should be taken in placing hands on rolls to determine the temperature and running calender. Keep hands away from bite of rolls.
8. DO NOT operate a calender without first giving a signal.
9. DO NOT GRAB FOR A MISCUT GAUGE. CUT ANOTHER.
10. Keep hands away from guides and scrapers.
11. Calenders shall operate at slow speed when starting fabric are starting and when signal is given.
12. Calenders are to operate at fast speed only at end of roll.
13. DO NOT clean, oil or repair your machine while it is in motion.
14. Stop your machine at once in case of emergency. Do not wait for instructions. Inspector at once.
15. When your machine needs repairs, report the fact to your Foreman or Inspector at once.
16. DO NOT clean, oil or repair your machine while it is in motion.
17. DO NOT stand bare at side of machine or pass. Keep flat on floor or in niche provided.
18. Guards can be removed only by mechanics or authorized persons. Do not operate any machine with guards off or in dangerous condition.

SAFETY FIRST - DO NOT TAKE ANY CHANCES

THE FIRESTONE TYRE & RUBBER CO. OF INDIA LTD.
Safety Department

فائر اسٹون

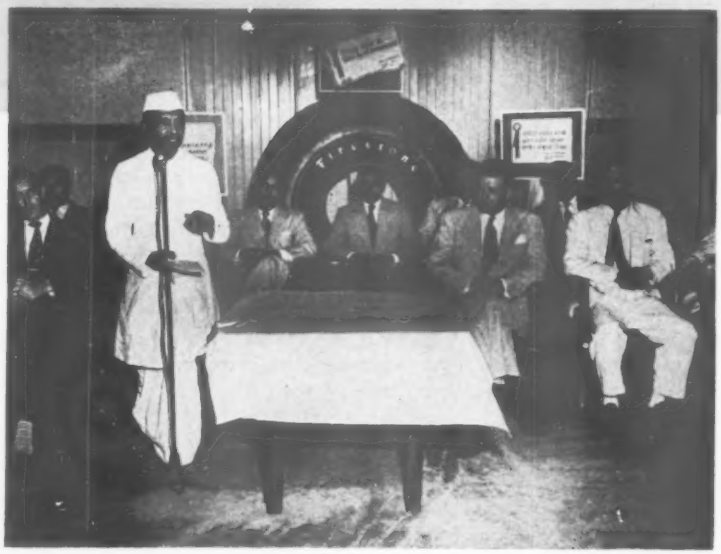
کیلنڈر آپریٹرس کے لئے

خطرے سے بچاؤ کے قاعدے

फायरस्टोन

केलेन्डर आपरेटर्स के लिए

खतरे से बचाव के कायदे



These three sets of rules for calender operators, in English, Urdi and Hindi give some idea of the language problem in Firestone's Bombay factory. In addition, many employees can read only Marathi and Gujerati. Instructions for other operations are being compiled in Urdi and Hindi.

The Honourable Shri Shantilap H. Shah, Minister for Labour and Public Health, addresses a Firestone meeting in Bombay. Front row, left to right: Cockraine Barnett, A. D. Wenzel, and William T. Turner, American Consul General. In the back row are members of the Safety committee. On the wall are prize-winning safety slogans in three languages.

Safety on Six Continents

By J. E. TRAINER

THE safety programs in the foreign plants of the Firestone Tire & Rubber Company are basically the same as the program in the United States. But because of local conditions and practices abroad, individual programs, in some respects, differ from country to country.

The present Firestone safety program was put into effect throughout the organization during 1944. Since 1945, the first full year under the new program, the over-all frequency rate has been reduced from 11.1 to 1.6 in 1953. Frequency in the foreign plants was reduced during the period of 1945-1953 from 29.3 to 2.2.

In all its various aspects, the Firestone safety program is designed to achieve a dual goal: to make every Firestone employee safety-minded; and, having achieved that, to keep him that way. To a great degree we have succeeded.

The process of inculcating safety in the minds of thousands of employees in different parts of

- **Plants in North and South America, Europe, Africa, Asia and Australasia are showing the results of Firestone's world-wide accident prevention program**

Since the inauguration of Firestone's present industrial safety program by J. E. Trainer in 1944, the organization has won the National Safety Council's Award of Merit eight times and its overseas operations have shared in its safety progress. Mr. Trainer, who is Executive Vice-President of the Firestone Tire & Rubber Company, Akron, Ohio, has received wide recognition for his work in industrial safety. In 1948 he was appointed chairman of the Engineering Committee of the President's Conference on Occupational Safety and in 1950 was elected Vice-President for Industry of the National Safety Council.

the world calls for a program both rigid and loose—sufficiently rigid so that basic principles must be observed and loose enough so that changes can be made in the program and emphasis on any one feature can be strengthened or lessened to meet local conditions.

The basic elements in the Firestone program are those prescribed by safety engineers the world over. Enthusiastic leadership by top management in Akron and in each plant here and abroad is the keystone of the program. Next in importance is the presence in each plant of a trained safety man whose major duty is safety. Safety training of all members of supervision, and their daily contact with the individual worker for a short talk on safety, are two other important factors.

In all Firestone plants every new employee is instructed in the safe operation of the machine on which he is going to work. This is done regardless of his experience, and supervision emphasizes the fact that the safest methods are also the most efficient.

Interplant safety contests are held regularly and winners receive adequate recognition for their achievements. These contests are extremely important in whipping up enthusiasm for the program and creating a spirit of teamwork and competition.

Great emphasis is placed on good housekeeping, the personal use of safety equipment such as safety shoes and glasses, and the guarding of machinery. And finally, we constantly hammer away at safety through our plant papers, bulletins and other media.

These factors constitute the basic safety program in the United States and abroad. Each is extremely important; and to some degree is observed in all our foreign plants. However, because of local conditions, emphasis is placed on those factors which, we know from experience, will gain the best results.

G. J. Penfield, Sao Paulo, Brazil, factory manager, presents National Safety Council's Award of Merit for 1951 to members of plant safety committee.

For instance, in our Bombay, India, plant, making tires and tubes, campaigns to promote the wearing of safety shoes were almost totally unsuccessful. The native Indian simply does not wear shoes. But he has a laudable and intense desire for recognition. And it was to this we appealed by instituting a system of safety awards. Silver and gold pins are awarded to members of departments with outstanding records. And when they repeat a good safety performance, an engraved pencil is awarded. In addition, a person of prominence, like the Mayor of Bombay makes the presentations. This function is generally followed by a tea party and the taking of a group picture.

The pins and pencils are greatly prized and the picture generally

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Atomic Energy Is Now at Work...

By ALFONSO TAMMARO

IN A FIELD such as ours, where weapons were, and still are, a major part of our business, choice of subjects to discuss is still somewhat limited. However, the Commission is devoting more and more time to peacetime uses of atomic energy and has embarked on a broad five-year program for the development of nuclear power plant technology.

As you know, all matter is made up of atoms. Further, atoms of a given element are not exactly alike. Some weigh a little more or a little less than the others, but all have the same chemical characteristics and behave pretty much alike, physically and otherwise.

But these minute differences are important. For example, if we take a hundred atoms of carbon, we find that most of them have a unit weight of 12. We call that carbon with an atomic weight of 12. A few others would have an atomic weight of 13, and one special kind an atomic weight of 14. All three kinds—Carbon 12, 13 and 14—are "isotopes" of carbon. They are chemically and physically alike except for a slight difference in weight.

However, if we were to hold a Geiger counter next to these different atoms of carbon we would find that the counter would register no activity when held over Carbon 12 and Carbon 13. We would therefore say that these two kinds of carbon atom are stable. However, if put over Carbon 14, the counter would show some activity. In other words, Carbon 14 is radioactive, therefore, a radioisotope.

Nature has approximately 100 elements and about 1500 kinds of isotopes. About 1000 of these are radioisotopes and the balance are stable isotopes. In other words, a radioactive atom of carbon, phosphorus, lead, or anything else, behaves just like the stable atom of that particular element, except that the radioisotope gives off some atomic radiation.

The Peacetime Atom

To what extent have radioisotopes been used industrially in the United States? And what for?

Before 1939 radioisotopes were very much a laboratory tool. There were perhaps fewer than 25 universities in which radioisotopes were being studied and perhaps fewer than 500 men who could discuss with any clarity what went on inside the atom.

Today we have a total of 3,400 different institutions and about 15,000 persons using radioactive material. Among them are 860 firms in 1100 plants. These plants are using radioisotopes for making production faster, easier or cheaper. Expansion of their industrial use has been ninefold in the past four years.

The accompanying charts give some idea of a few of the many peacetime applications of the atom.

ALFONSO TAMMARO is Assistant General Manager for Research and Industrial Development, United States Atomic Energy Commission. This article has been condensed from an address before the Chamber of Commerce, Providence, R. I., July 22, 1954.

Radiographic Inspection

The first of these applications involve the *radiographic inspection* of materials to detect flaws in castings, welds, and to inspect finished complex mechanical assemblies. In this application, a radioisotope, usually Cobalt-60 or Iridium-192, is substituted for radium or X-rays. The material to be inspected is placed between a source of radioactivity and a sheet of photographic X-ray film. After the exposure has been made the radioisotope is removed and the film is developed. Any flaws in the material tested are immediately noticeable on the film.

There are several advantages to this radioisotope method of inspection. First, the capsule containing the radioisotope weighs considerably less than one ounce and in size approximates the eraser on a lead pencil. This means

New materials . . . new products . . . new techniques in process control . . . with a few safety features thrown in . . . these are important industrial applications. And atomic power plants may be closer than you think

that the radioisotope can be brought to the work instead of vice versa and this feature permits ready inspection of many bulky parts.

The second advantage to this method is one of cost. One gram of radium costs approximately $25,000. The same quantity of Cobalt-60 sells for about $50. The cobalt, however, has to be replaced every 5 to 10 years. Approximately 350 companies are using radioisotopes for radiographic inspection.

The American Society of Mechanical Engineers (ASME) boiler codes recognize the value of radiography in inspection and these codes permit the use of thinner steel shells for the same boiler pressures. The allowable reduction amounts to 12 per cent in the thickness of the boiler plate (and in the total tonnage of steel needed) and one can also save from 15 to 25 per cent in the cost of welding, depending upon the size and thickness of the pipe.

Other examples include the radiographic inspection of cross-country oil and gas pipelines, shop castings, complex machining and the inspection of complex mechanical assemblies; for example, a proximity fuze to determine in the final inspection whether all of the component parts had been properly assembled.

Thickness Gages

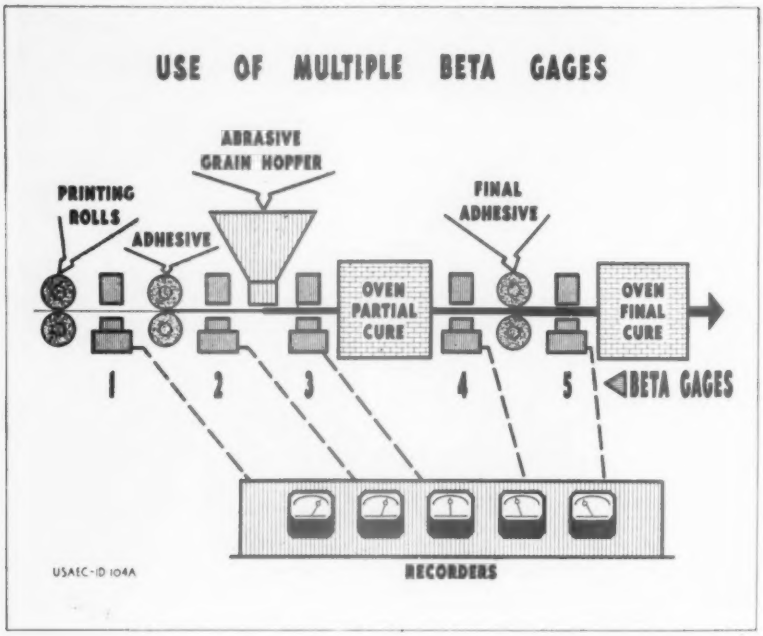
Let us turn to another application of radioisotopes called *thickness* or density gages. This application of radioisotopes is similar to the method used for radiographic inspection except that a meter is used in place of the photographic film.

The material whose density or thickness is to be measured or controlled is passed between a source of radiation and a radiation-detection instrument. Variations in the thickness or density of the material will result in variations in the intensity of radiation reaching the detector. The thicker or denser the material, the lower the intensity of the transmitted radiation which reaches the detector; the thinner or lighter the material, the higher the intensity of transmitted radiation.

The detector can be used to operate a strip-chart recorder and the indications from this recorder can be fed back into mechanical machinery which will control the thickness of the material being measured. A radioisotope gage, therefore, can be used for all three purposes—for measuring, recording and controlling the thickness of the material.

The radioisotope gage has the enormous advantage in that it is non-contacting and that measurements can be made continuously without stopping the production line. In these cost-conscious days many manufacturers pay a premium for a raw material or semi-finished material that is more uniform because it can be run through their plants faster. An example is the new strip mill of the U. S. Steel plant at Fairless, Pa., which operates at 7,500 feet per minute. Here isotope thickness gages measure and control the thickness of sheet steel.

The Carborundum Company makes abrasive paper by a process which consists essentially of adding a known quantity of adhesive to a base paper, adding the abrasive, giving it a partial oven-cure and then adding a final adhesive. It is important, of course, to have uniform quality control because there is nothing so aggravating as to have a piece of abrasive paper break because of poor quality be-



Multiple beta gauges are used to improve quality control in the manufacture of abrasive paper. A no-contacting gauge is particularly important in this type of operation. These five gauges saved one company $100,000 in one year.

fore the useful life has been obtained.

This company purchased five radioisotope thickness gages for a total investment of $40,000. They found to their surprise that this investment was recaptured to the extent of $100,000 in the first year because of improved quality control, particularly in cutting down rejects. They also were able to pinpoint that certain parts of their abrasive making machine were giving them trouble which they had not even suspected.

Using a radioisotope for a thickness gage is also applicable to the textile industry. For example, it has been used to measure the weight per unit area of non-woven combed cotton fibers which weigh only one-half ounce per square yard.

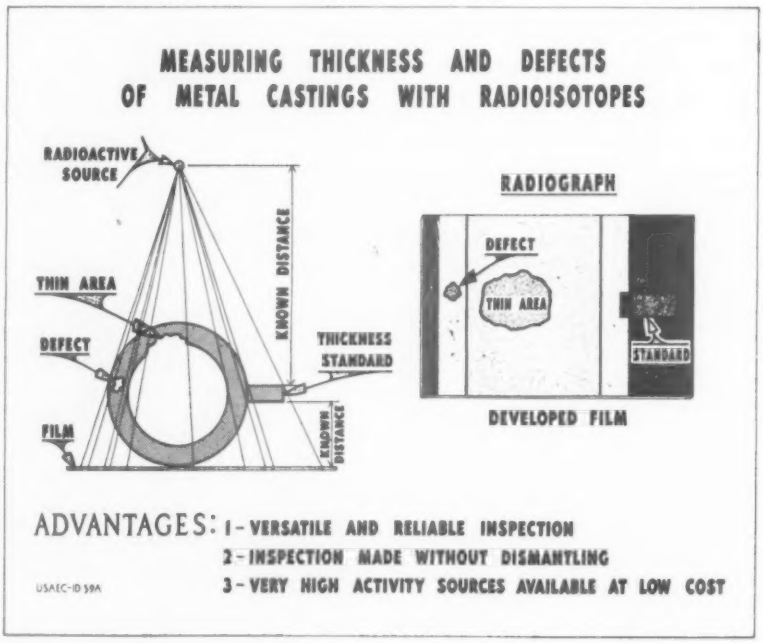
Thickness gages have also been applied to the production of rubber tires. In the production of tires, a certain minimum quantity of rubber is necessary around the cord, but more rubber, surprisingly enough, does not add anything to the quality of the tire. With the methods for measuring thickness previously available, one had to shoot well above this minimum quantity of rubber to avoid going below it.

With a radioisotope thickness gage it was found that one could narrow the tolerance limit by about two-thirds, as well as lowering the target value of the thickness. Material savings as high as $100,000 per year from one calender machine have been claimed.

Radioisotope thickness gages have been used for sheet material such as brass, steel, silver, aluminum, plastics, fiberboard, etc. The isotope gage permits this process to be done continuously without stopping the line.

The third general application of radioisotopes deals with *processes involving friction and wear.* The machine tool industry in the United States runs to many millions of dollars per year. If improvements could be made in reducing the wear of machine tools only 10 per cent we can see how much this would help American industry.

The Cincinnati Milling Machine Company conceived the idea of sending to Oak Ridge the tips of the cutting tools under test. These tips were made radioactive in the Oak Ridge pile and returned to Cincinnati. The measurements of the rate of tool wear in a lathe



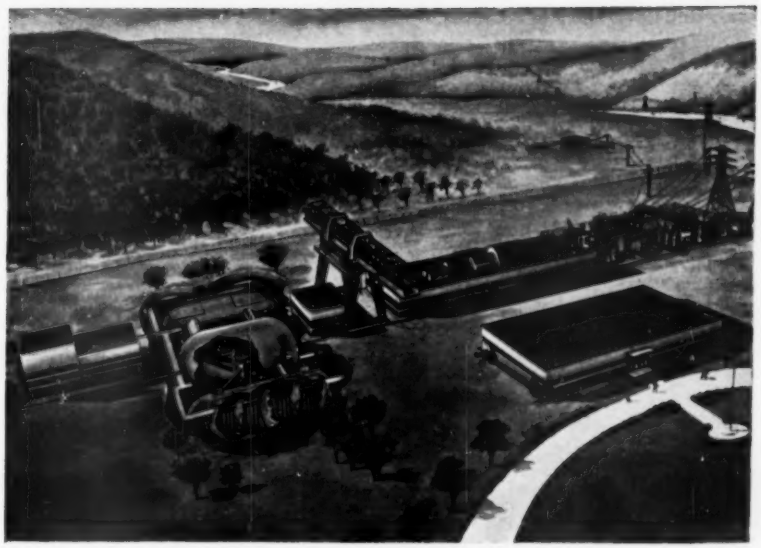
Thickness and defects of metal castings can be determined with radioisotopes. Quantitative information can be obtained under service conditions by comparison of the relative darkening of a photographic film by the thickness standard and by the pipe, elbow, etc., under test.

cutting operation were carried out in a small fraction of the time required by the conventional approach.

The minute amount of the cutting tool worn off during the process remains on the chips cut from the stock and, of course, these chips are therefore slightly radioactive. The radioactivity of the chips and hence the amount of wear is measured by a Geiger counter. The method has been found in practice to be so sensitive and so clear cut that accurate measurements of tool wear can be made at intervals of about 30 to 45 seconds. This is to be compared with the several hours or several days by the conventional procedure.

Furthermore, one does not have to dismantle the tool or change its position or even stop the cutting operation. After one has obtained two or three readings to satisfy himself as to the rate of tool wear, he then goes on to study the next variable, for example, changing the cutting angle of the tool.

This principle has also been used in a somewhat different way.



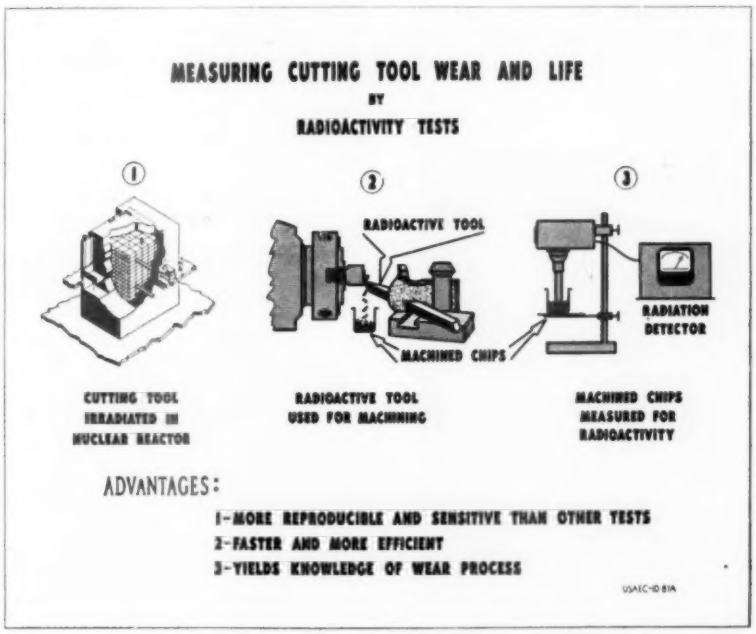
Artist's conception of pressurized water reactor. This A-power plant will produce 60,000 watts of electricity, enough to light a medium size city. For safety reasons, the reactor itself will be underground.

An oil company in California wanted to produce a better kind of motor oil and for this purpose used radioactive piston rings inside of an automobile engine. The amount of wear could be determined directly and continuously by measuring the radioactivity found in the oil. The conventional method of measuring such wear is to dismantle the engine and to apply a micrometer to the piston rings, or other parts.

Radioisotopes have been used in a similar manner to measure the rate of wear of commutators of motors and by the Chrysler Corp. to determine the wear of breaker-points in automobile ignition systems. The method has almost limitless applications.

Use of radioisotopes does not require particularly elaborate equipment or a large capital outlay. Facilities for radiographic inspection, for example, involve an outlay of less than $500. A completely equipped laboratory for radioisotope investigations in process-control and in research can be set up for $1500 to $3000, depending upon the quantities used.

The cost of radioisotope thickness gages ranges from about $4,000 to $8,000.



Radioisotopes are used to speed up measuring the rate of wear of cutting tools. Tips of tool are made radioactive and the radioactivity that adheres to the machined chips gives a direct measure of the rate of wear. The principle can be applied to any problem involving friction and wear.

Five-Year Program

I would now like to outline the Commission's 5-year reactor development program leading toward competitive nuclear power.

The atomic age, as you well know, opened with the introduc-

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LIGHT'S Diamond Jubilee

The glow of Edison's first incandescent lamp marked the beginning of the electrical age —and a new way of living for millions

WHEN EDISON died in 1931, it was suggested that all electric current in the United States be turned off for one minute during his funeral as a tribute to his great contributions.

The suggestion received little encouragement. Whoever made it had no idea of the inconvenience, hardship and danger that would result if all electric current in the country were shut off for even one minute.

And since 1931 the nation has become even more dependent on electricity — and more vulnerable to enemy attack. It is some consolation to know that throwing a single switch or knocking out one power plant wouldn't cripple the whole country, though local damage and disruption of activities could be appalling.

Seventy-five years ago, shutting off all sources of electric current would have caused little more than minor inconvenience. Coal-fired boilers and water turbines powered industry's machines. Except for a few arc lights, gas lighted the cities and kerosene lamps the homes and business away from the gas mains. The telegraph, battery operated, was the principal means of communication. Few telephones were in use.

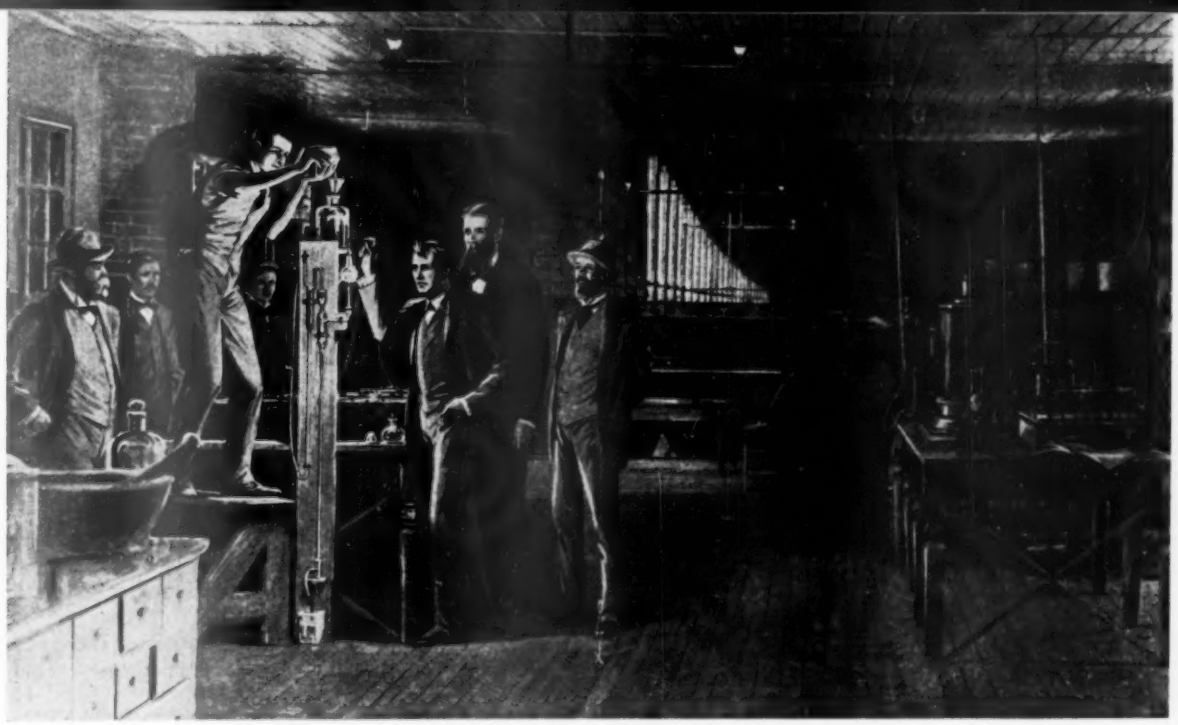
The supreme intelligence of the universe will not let us advance much further spiritually until we have caught up spiritually. A fundamental law of science is that all forces must be kept in balance. When any force goes off at a tangent, there is a smash.

THOMAS A. EDISON

Fluorescent lamps, devised by Edison and perfected by many others, provide light levels needed by modern industry in peace and war.

In 1878, Thomas Alva Edison, a young man of 32, announced to the world that he would develop a practical incandescent lamp within six months. For sheer audacity, that announcement was equalled only by Babe Ruth's calling the shot in the 1932 World Series, when he pointed to the bleachers and hit the next pitch there.

Edison didn't quite meet his deadline. But on October 21, 1879, in his laboratory at Menlo Park, N. J., the ancestor of our incandescent lamps was demonstrated to a small group. Its light output was feeble by today's standards



Under the light from flickering gas jets the first practical incandescent lamp was developed. Here is the great moment as pictured by a contemporary artist.

but it worked. The electrical age had begun.

Many scientists of that day had been skeptical about the possibility of a practical incandescent lamp. Swan's demonstration of an incandescent lamp some 19 years before had been little more than an interesting laboratory experiment. And Edison had none of the tools essential to his success.

For power sources there were only elementary batteries and inefficient dynamos. There were no glass "envelopes" for lamps, no cables or junction boxes for distribution lines. No one had yet devised a system for feeding electric current to a number of units which could be operated individually. There was no practical device to control the flow of current.

All of these essentials had to be invented and fashioned before the new type of lamp could be practical for general use.

Throughout the first half of the nineteenth century research in electric illumination had been pursued. Most of the inventors followed the principles of gas and candle light — actual consumption of the light-giving material. In 1809 Sir Humphrey Davy produced an intense arc of light between the points of two charcoal sticks with current from a 2,000-cell battery.

With the development of a practical dynamo, the arc light became commercially feasible for large outdoor installations. Edison experimented with it but was soon convinced that home lighting would have to be incandescent; it must use a material that would be luminous at white heat but would not be consumed quickly.

Where to get the materials was a staggering problem. Edison devised his own processes and set up his own factories to blow bulbs, manufacture sockets, switches and filaments, build dynamos, insulate wire and cable and generally supply the industry with its most elemental tools.

Lamps in use today are the same in principle as the one Edison brought out in 1879. Important advances since then are the substitution of tungsten for carbon filaments in 1906 and the

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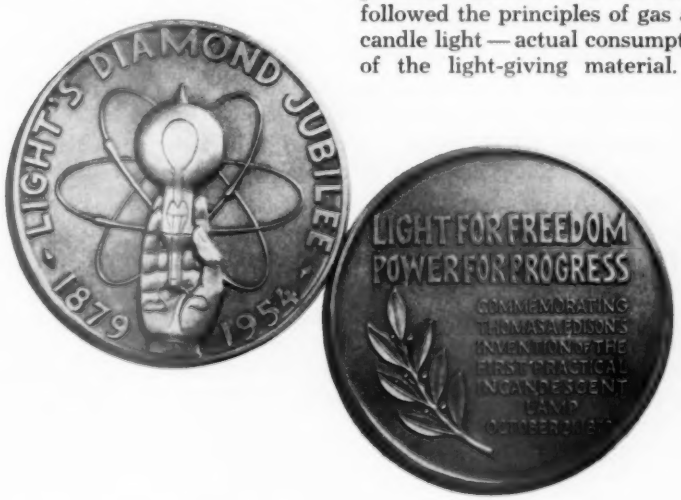

The Accident Syndrome

A Clinical Approach

By MORRIS S. SCHULZINGER, M.D.

SYNDROME: the pattern of symptoms of disease or the like; a number of characteristic symptoms occurring together. (American College Dictionary)

FOUR decades of heroic preventive efforts have brought some notable achievements in accident prevention, yet the toll remains staggeringly high. The annual cost of accidents in the U. S. A. has remained for many years at approximately 100,000 killed, 400,000 permanently disabled, ten million injured with one or more days of disability, and nine billion dollars of direct and indirect expenditures.

There is a serious accident in one out of every five households each year, and every day an average of 260 persons are killed and 26,000 are injured.

The accident problem looms even bigger in the face of the large percentage of young persons in the prime of life who are killed or crippled. The anxiety, pain and emotional disequilibrium into which family groups are thrown as a result of accidents, and their social and economic concomitants are also important.

Considering the seriousness of the problem and the progress that has been made in reducing morbidity and mortality from other causes, the meager account of basic research reported on accidents is another cause for concern.

The author's interest in accidents dates back to 1930 when he entered industrial and general practice. By choice and from the beginning, the major part of his practice was devoted to the care of the injured. Most of these came from a large and varied group of small industrial and business establishments, while about 30 per cent of the accidents were non-industrial.

Since the accident problem is still an open one, a study of accumulated case histories was undertaken in 1947 which eventually included 38,000 cases. These represented 27,000 industrial accidents, 8,000 non-industrial accidents and 3,000 cases of illness from all causes, studied for the purpose of comparison.

This group of patients differs in many respects from those studied by others. It was not limited to industrial accidents, or to one or a few plants, industries, occupations, age groups, or types of injury. The accidents occurred in the home, at work, in public places, in schools, and on the road. The patients were of all social, economic and cultural levels and represented nearly all occupations and industries, most of the plants, and many of the busi-

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In his private practice in Cincinnati during the past 25 years DR. MORRIS S. SCHULZINGER has handled 35,000 accident cases and this experience forms the basis of the conclusions presented here. The article has been condensed slightly from a paper read at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 22, 1954.

THE PEOPLE WHO GET HURT
Based on studies of 35,000 accident cases

- **Accident proneness:** The old theory that most accidents are due to a relatively small fixed group of "accident-prone" individuals is open to question. A variable group of dynamic, environmental and temporal factors is involved.
- **Age:** 50 per cent of non-industrial accidents occur before 25; accidents reach a peak at 21.
- **Sex:** Males have a significantly higher incidence.
- **Distribution:** 74 per cent of accidents were due to relatively infrequent solitary experiences to 86 per cent of individuals.
- **Personality:** Irresponsible and maladjusted individuals have a significantly higher incidence of accidents, especially repeated ones.
- **Season:** Accidents reach peak during summer months. February is low month.
- **Time:** Incidence of non industrial accidents rises from low at 5 a.m. to peak at 5 p.m. Peak hours for industrial accidents are 10 a.m. and 3 p.m.
- **Types of accidents:** 80 per cent of non-industrial accidents belong to one of six types: Falls, aggressive behavior, handling objects, foreign bodies, motor vehicles, and stumbling into objects.

ness establishments of a large mid-western community.

About 50 per cent of the non-industrial patients and 13 per cent of the industrial ones resided in the neighborhood of the office, while the others were scattered over all sections of the metropolitan area and surrounding rural communities. The series of patients was accumulated under continued personal care and supervision over a period of 20 years, and contains many complete family groups, patients of all ages and both sexes, and cases involving state compensation, public liability, private pay, as well as the indigent. The group studied equals about 5 per cent of the total city populations and appears to be representative of the community.

The material was analyzed by appropriate standard statistical procedures, using U.S. Census population and employment figures for comparison. Except for a small percentage of the records which were lost, it represents a consecutive series of cases. The unusual size and variety of the material permitted a detailed analysis, by yearly and multiple-year groups, of the influence of such factors as age, sex, season, month, hour, manner, type, frequency and anatomical distribution of injuries.

Comparative studies were made between industrial and non-industrial accidents and between the accident experiences of responsible and normally adjusted individuals (Group A) and irresponsible and maladjusted ones (Group B).*

The investigations yielded new facts as well as confirmations and refutations of some old theories. This article is of necessity limited to the more important findings and conclusions. The studies suggest that the widely accepted theory attributing most accidents to a "small fixed group of 'accident-prone' individuals who cannot help having accidents" is open to question. They indicate, instead, that when the period of observation is sufficiently long, the "small group of individuals responsible for most of the accidents" is essentially a changing group, with new persons constantly falling in and out of the group.

Accidents appear to a be widespread endemic affliction, and part of a disease syndrome—the accident syndrome. Most accidents were observed to conform to a

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*This group of patients (B) was found in the uncollectable file. The irresponsibility and maladjustment of the group became quite apparent from a study of the case histories. All other patients were considered normally adjusted for the purposes of this study.

THE SPORTY SET

DID you ever hear of Lavoisier's theory of conservation of mass? It has to do with the proposition that new matter is never created on earth, but what we have and use is just converted from one form to another when physical changes as we see them occur.

So what, you make with a rejoinder?

Well, I submit an analogy, that when we take a chance at something and win, somebody else or many somebodies take chances and lose. That whatever luck you have is offset by the bad luck of others similarly involved. This way we maintain the status quo.

When you go fishing and catch a few, you're lucky—but what about the fish?

When you go hunting and bag something, you're lucky—but what about the game?

When you play poker and win, somebody has to be unlucky to supply the loot.

When you stole that gal from your best friend, he was lucky and you were (I wonder if that's right?).

When you take a chance on the road, or on your job, and aren't mutilated—somebody else who takes the same chance isn't so fortunate.

Lady Luck and the odds don't care who you are—and what's more important, who you think you are. When the time comes for those three lemons to line up, you'd better make darn sure you're not pulling the handle.

The real sports don't stick their necks out unless there is a chance of dragging something. There are risks, and there are calculated risks, and the real sports are pretty shrewd calculators.

The smart boys calculate their odds beforehand, But, the poor stupe who gambles his life, or sight, or arms, or legs, or other parts in the unsafe operation of machines or automobiles; or in unsafe actions involving otherwise safe objects or agencies, doesn't have the slightest idea what his chances are.

What's more pitiful, he hasn't a thing to gain from his chances. No possibility of a daily double, three bars, 7-11, full house, or what have you to work on.

Oh yes, he has one thing to gain. If he commits suicide he won't have to keep on paying taxes.

Is anyone that mad at the tax collector?

ROBERT D. GIDEL, *Senior Engineer,*
Industrial Department, National Safety Council

Operation Live Longer

Workers face more danger on their way to and from work than they do on the job. This view at the end of a shift of an Indiana industrial plant focuses attention on the fact that workers are also drivers and pedestrians and need protection around the clock.

By FRANK DAVIN

150 Fewer Fatalities
4,000 Fewer Injuries
$14,000,000 Costs Saved

THIS is Indiana's objective for the second half of 1954 in the state's all-out drive on traffic accidents that has tied in every state and local agency in Hoosierland plus labor and industry—all under the militant leadership of Indiana's Governor George N. Craig.

And this can be big news to industry throughout America, for the Hoosiers are hitting the off-the-job accident bugaboo with a new gimmick that is producing results, may be the blueprint for a nationwide off-the-job accident campaign.

Figures show that workers suffer more accidental deaths off the job than on the job. Last year, nearly seven out of ten deaths and more than half of workers' injuries occurred off the job, principally in motor vehicle accidents.

There's nothing very new about off-the-job safety promotion. Reams of copy have been written about such efforts by single companies or corporations. But this is the first time an entire state has teamed up to crack down on this industrial accident hazard.

Industry and labor have joined this new crusade for traffic safety. For some time Indiana's industrial organizations have been using the National Safety Council's *Operation Safety* theme program to beat

FRANK DAVIN is editor of PUBLIC SAFETY, National Safety Council.

the off-the-job accident bugaboo.

Then, Indiana's traffic safety director, Joseph L. Lingo, came up with an industrial kit for promoting traffic safety. And the boom was on.

Management and labor tied right in with the idea. Of course, representatives of both management and labor had agreed openly at the White House Conference on Highway Safety to do just that. But, even their best friends didn't expect much to come of it.

The new kit seems to be furnishing the opportunity. First of all, the Indiana State Police are being used to introduce the kits to Indiana industrial plants.

James L. Robb, regional director of the Steelworkers' Union, Congress of Industrial Organizations, and Hobart Autterson, secretary of the Indiana State Federation of Labor, are really implementing the work of the White House Conference on Highway Safety, and on the side of industry the ball has been carried by Arthur Conde, executive director, and Harold L. Shuman, director of industrial relations, both of the Indiana Manufacturer's Association, and Jack E. Reich, executive vice-president of the Indiana State Chamber of Commerce.

The new off-the-job accident kit is simple enough at first glance, but it takes know-how to get full benefits when using it, as Indiana industry is finding. Complacent safety supervisors have been jarred to their heels by the enthusiasm generated wherever the kits have been employed.

Basically, the kits contain a planning guide, fact sheet, subject outline, suggested editorials and news releases, click sheet, spot announcements, a copy of *Indiana Traffic Accident Facts*, samples of leaflets, posters and other supplementary materials, plus letters from public officials and industrial labor organizations stressing the need for coordinated cooperation to make the program work.

This year, kits are issued bimonthly, cover these six themes: winter hazards, motor manners, vehicle maintenance, vacation driving, school safety and night traffic hazards.

Next year, *Operation Live Longer* will be issued quarterly. Kits will cover: winter hazards, motor manners, summer safety and child safety.

The kits for 1955 will cover a dozen themes under the foregoing headings and key into the deadliest days campaigns covering Christmas-New Year's, Memorial Day, the Fourth of July and Labor Day.

As Joe Lingo put it, "These programs tie the plant off-the-job accident prevention program to a coordinated community-wide one. The combination has given traffic safety a new look. A Hoosier workman now is subject to almost constant pressure to walk and drive safely. When organized society puts the taboo on the traffic violators and the take-a-chance guy, we've begun to win the war on traffic accidents."

Captain Paul T. Beverforden, director safety and education, Indiana State Police, is in direct charge of the industrial safety program. With 11 troopers—each a safety specialist—he covers the Hoosierland accident front.

And what a job these troopers have taken on. Take Steve Ranich covering District No. 1 out of Dunes Park Post. Ranich is responsible for the program in ten of Indiana's northern counties—the heavy industrial areas including Gary, Whiting, Hammond, South Bend, etc.

Once in a while he gets a "do-nothing" reaction from a bored or tired safety supervisor. But Ranich isn't easily put off. On one such occasion, he noted that after six weeks from his first call no action was forthcoming from a large industrial concern in his area. Next time, Ranich asked for and got an appointment with the vice president in charge of operations, explained the program to him. This executive was so enthusiastic, he asked the young trooper to stay for lunch with top plant executives. After hearing Ranich, they bought the idea lock, stock

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Hoosier state troopers found willing co-workers among plant protection personnel in all off-the-job safety efforts from car checks to vacation driving reminders.

Gimmicks and gags sparked the off-the-job accident prevention program in hundreds of Indiana plants. Here "Swami" gazes into crystal ball, foretells dim future for careless.

As industry became more complex, eye hazards increased. Many companies now require eye protection for all persons in the plant, including visitors.

INDUSTRY'S BIG ASSET . . .

Seeing Eyes

By HENRY H. BISBEE, O.D., F.A.A.O.
Burlington, N. J.

Lenses that protect — and correct where necessary — are low cost insurance for tangible and intangible values

WITH MAN'S EYES so prominently placed in the upper frontal portion of the head, it is little wonder that so many injuries occur to them and that man has spent much money and effort to protect them.

Throughout the ages man has attempted to shield his eyes against the hazards of living with various protective devices. The ordinary hazards, such as wind, dust and flying objects were easily guarded against. But nature did not guard him against glare from snow, ice, sand and large bodies of water, so early man invented goggles.

One can readily imagine the early human being of the far north placing his hands in front of his face and peering through his fingers to protect his eyes against snow glare. The next step, cutting a slit in a piece of whalebone, resulted in the first protective goggle.

A more simple method of reducing glare was practiced by the plains Indians who rubbed soot on the face about the eyes. The wide brimmed hats of agricultural peoples were used for similar purposes.

As civilization advanced, hazards increased. In our industrial work world there are many hazards specific to various types of work which have also forced the invention of specific types of protection. Industrial progress has provided safeguards in keeping with technological advances.

Going back to the Stone Age, when man first learned to work with stone, the hazards were few. It was true, of course, that the job of chipping a stone to form an arrowhead, knife, or spear with the green leg bone of a deer presented a definite hazard of flying chips. However, this cannot be compared to the hazards of the present day high-speed methods of using pneumatic tools and cold steel to dress stones.

Nature provided many safeguards for the eye. It is cushioned in the orbit by a fatty tissue layer. It is suspended by ligaments and muscles and is protected by a cone of bones. Eyebrows protect against dust, many flying objects and glare from above the eye level. Eyelids protect from glare and direct injury from flying objects by their quick reflex actions. The pupillary action aids in protecting against excessive light.

The muscles of the forehead and of the face allow squinting, protect against glare, heat, direct blows and many flying objects. The retinal responses to moving

Visual screening programs are helpful when conducted by trained personnel and proper use is made of the data obtained.

objects in the peripheral field of vision aid in preventing accidents by inducing reflex reactions of the lid, head and body.

Man's ability to distinguish colors has many advantages, for he has learned to associate certain colors with danger. This helps to prevent accidents. He uses color codes in electrical wiring and during recent years the use of color in our work places as an aid to seeing has contributed much toward safety.

Few injuries are confined to one part of the eye. Injury to one portion may well be felt in another; the whole affecting the cosmetics of the organ and, in severe cases, loss of vision, affecting the whole organism, its function, and, in serious cases, the future place of the individual in society.

Types of Eye Injuries

There are many types of industrial eye injuries:

1. Contusions
2. Concussions
3. Ruptures
4. Dislocations
5. Thermal Injuries
   a. light
   b. heat
   c. electric
   d. glare
6. Chemical Injuries
   a. acids
   b. alkalies
   c. caustics
7. Retained foreign bodies
8. Wounds without foreign bodies
9. Infections from trauma
10. Explosions
    a. powder
    b. carbonated beverage bottles
    c. metals

WHERE EYE INJURIES OCCUR

Handling objects	7%
Falls	1%
Machinery	13%
Vehicles	2%
Using Hand tools	28%
Falling objects	14%
All other types	35%

While you have been reading this page, some worker, in this country, has suffered a painful injury to his eye. The estimates of such accidents vary from one every thirty seconds to one every three minutes.

These injuries resulting from pierced or ruptured eyes; from fragments of wood, metal, stone or glass; crushing by large flying objects; burning by acids, caustics, molten metal, or by the less obvious but insidious, harmful light rays from welding operations, and poorly controlled germicidal and therapeutic lamps. Finally, the eyes of some workers will become dim, and in some cases, become blind as a result of the cumulative effects of the absorption of industrial poisons.

In some recent statistics eye accidents represented about five per cent of the total compensated cases and approximately three per cent of the total compensation paid. There are no exact figures for the cost of non-disabling eye injuries, according to the National Safety Council which gives the following information:

Seven State Labor Departments report that the average compensation paid in 1,693 permanent partial eye injuries was $1,596; for 7,278 temporary total eye injuries, the average compensation was $28; the compensation for all eye cases in the group averaged $328; the cost in these seven states amounted to $2,946,096.

The average cost of a pair of safety plano goggles is about $2.70.

In the State of Pennsylvania, the maximum compensation for one eye is $2,500, and up to $10,000 for both eyes. In New Jersey, the maximum compensation for one eye is two-thirds daily pay for 150 weeks, and for total loss of vision to both eyes is two-thirds daily pay for 450 weeks. A recent decision in New York awarded $26,500 for loss of vision for one eye. While this seems an unusually large amount to award for loss of vision for one eye, I am reminded of a statement by the late Harry Guilbert of the Pullman Company who asked succinctly: "Whose eye is it? Yours or mine?"

The frequency of eye injuries in our industries is appalling when

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Faces in the Lobby

(Fiction)

By BILL ANDREWS

Monday, October 18, 1954, 9:00 A.M.

HARRY DEXTER has our company's delegation well in hand at the registration desk. Sue is catching a second breakfast with some of her old friends of the Nursing Section. My section doesn't meet till tomorrow afternoon, and all of a sudden I can relax in a chair in the Hilton Lobby and watch the crowd whirl by as another National Safety Congress is born.

So I begin to play a game with myself — trying to guess the life story behind the faces in the crowd...

That eager youngster with the briefcase heading towards the stairs to the Lower Lobby Exposition Hall looks familiar. His eyes are big with wonder; his face is both excited and a little anxious. I think, perhaps, he is what I was some 17 Congresses back — the cub safety man, his engineering diploma still unfaded in its frame, attending his first Congress.

By his look, these brief months of safety work have stirred him. He has probably walked beyond the sense of strangeness and loneliness in some big plant to gain a little feeling of belonging and being useful. But in the solid purposefulness of his stride I think I sense the first signs of first-year cockiness that replaces the aloneness. I think he descends upon the Exposition in a rapacious search for those few missing bits of information which will allow him to return to his boss and present the Great Plan which all bright youngsters know that all plodding oldsters have been unable to contrive.

If this is a sound guess, some guy very much like me — some old pro safety engineer — will have to act with skill and sympathy and great wisdom to punch the necessary holes in the Great Plan and thereby puncture some of this cockiness — and yet he will, I pray, be able to do it gently enough to bring the boy out of the cockiness into humility without leading him to cynicism or defeatism.

The next face is rough-hewn, seamed, fiftyish. A lot of weather has blown against it for a lot of years. He lifts his feet high as he walks, like a man who has known more rough ground than sidewalks. The clothes are good, but overloud and the cigar is good but overbig.

Construction man, I'd guess, and probably with a big outfit or he wouldn't be likely to be here. Job trained, I'd guess, but tough and well trained. Laborer, straw boss, assistant super on a big job — that would be the route.

But how does he come here? Did some wise old grayhead of his company drift up to the edge of a group at a damsite one day and hear this man explaining with much purple profanity and much depth of wisdom precisely why and how this blankety-blank-blank bunch of so-and-sos was about to jeopardize their this-and-that necks to the detriment of the work, the safety record and their dubious prospects for immortality? If that was the way it happened, I would like to pin a ribbon on the grayhead for the ability to see in a mine-run assistant superintendent a superlative safety man for his industry.

And I would have liked to have heard the conversation when Mr. Grayhead and his associates sold

my Mr. Loud-and-Big the idea that being shoved from a line job to safety work was really a promotion, not a sidetracking.

But it must have been a good sales talk, for Loud-and-Big is obviously happy, obviously at home, eagerly looking for the faces of friends. At a guess, I'd say this was his second or third Congress.

I don't have to guess on the next one. Dogue is his name—lean, leathery, slow moving, deeply pessimistic about the human race and a consecrated safety man. He was secretary of my section when I was general chairman, methodical, conscientious, most unhappy when he had to make a speech.

But I also know that at the LDA shop in St. Louis there is an inspection system in operation that isn't bettered anywhere in this country. Dogue isn't the most creative safety engineer in the business, but for utter devotion to duty, painful, plodding exactness of inspection and report, there is no better. I call to him,

"How are things, Dogue?"

He replies, "Terrible. The shop's a mess, full of booby traps. Can't get any cooperation from anybody. If we hadn't had a lot of lucky breaks we'd be at the bottom of the contest in our section. How are things with you?"

"Fine," I say, "Just fine." I mean it, too, yet I suspect that Dogue is going to beat me out in the contest like he did three years ago.

The other faces begin to blur into types—the overly scrubbed faces behind the glowing neckties are foremen brought in for edification. That tired, tense, excited face under the shabby hat is, I'd guess, one of the fanatics looking for people to whom he can explain the One Thing that will end accidents. A couple of men look like corporation bigwigs—I hope they came to learn, not to pontificate.

Finally another familiar face comes by, looks at me, pauses, uncertain. I can't remember the man's name or company, but he's been at section meetings before. He comes up to me and offers his hand.

"I heard you speak three years ago," he says. "Name's Bort, John Bort, from Indianapolis. I wrote you about some guards one time."

I remember vaguely, and greet him warmly.

He stammered around a bit, as a shy man does before he unloads his troubles on a stranger. But he had to talk, and so, finally it came out. The following is a highly abbreviated statement of what he told me:

Bort is 45, ten years a safety man, 15 years before that a clerk in the plant office of a 500-employee concern. Because he had kept accident records and handled compensation claims, they made him safety engineer during the war. He still is, along with being in charge of insurance, welfare and the first aid room. He also keeps spoilage records and handles freight damage claims. In ten years, his company has allowed him to attend two Congresses. His general influence in the organization is about that of a senior bookkeeper.

In effect, he wants to be told, "What do I do about everything?"

It's easy to read the pattern of years of plodding frustration—inadequate budget, inadequate knowledge on which to base claims for a better budget, minimum influence and neither the solid technical knowledge nor the colorful personality with which to conquer influence. Brushed off, put in a blind alley, a good clerk ruined by being launched into a field where mere clerkly conscientiousness could not produce results—brought out from behind the abstraction of figures on a page to a shop floor where men bled and screamed and he could not prevent the accidents that caused the blood and screams.

I could see it all, and yet, could I give him an answer? I said a silent prayer for guidance, and then let fly.

"Bort, here's an old hand's advice. Let's face the fact that you've too little training, too little influence, and that you are no super-salesman. You aren't going to be a well-rounded safety man—not ever. Yet, for your con-

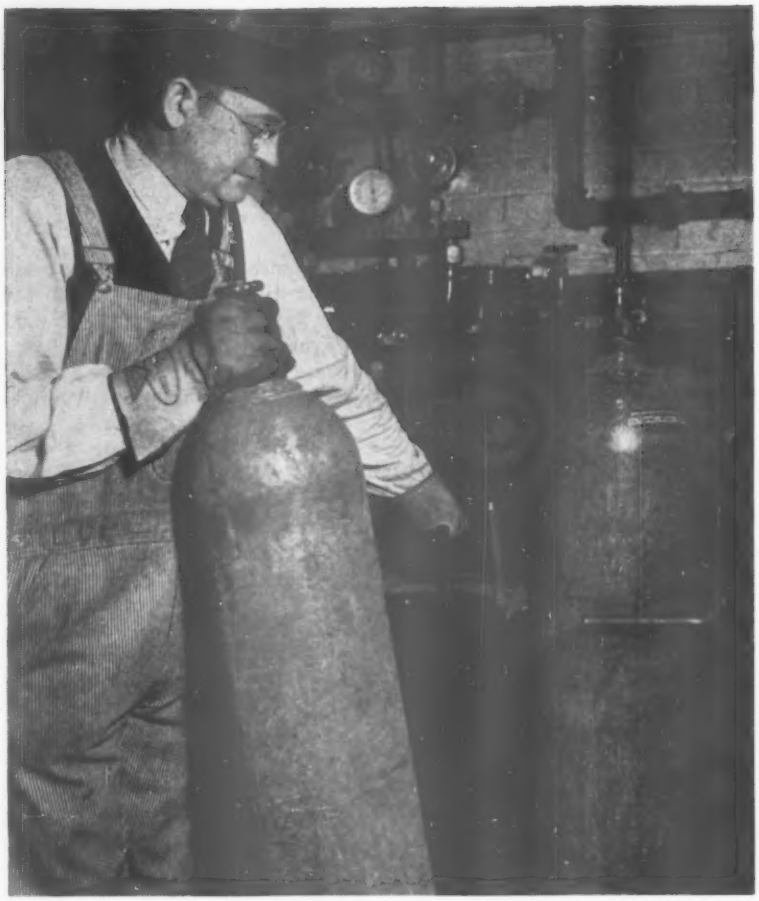
—*To page 178*

the LIGHTER SIDE
NATIONAL SAFETY COUNCIL
SEE— NOTHING HAPPENED
MY WIFE IS SUCH A WORRIER. SHE THINKS HUNTING IS DANGEROUS!
A.H.
WELL, WHO'S IT GONNA BE? SOMEBODY'S GOT TO TELL HER SHE'S A SLOPPY HOUSEKEEPER!
KEEP OUR PLANT CLEAN

What's in That Cylinder?

By F. R. FETHERSTONE

Use of words on compressed gas containers avoids limitations of color coding. New American Standard lists symbols for various materials



THE most satisfactory method for indicating the material contained in compressed gas cylinders, in the opinion of owners of cylinders, is through the use of legend (the written word) applied to the cylinder in a manner that will assure legibility.

This view is supported by Sectional Committee Z48 working under the procedures of the American Standards Association, which recently approved a revision of American Standard Z48.1, entitled *American Standard Method of Marking Portable Compressed Gas Containers to Identify the Material Contained.*

When originally adopted in 1942 this standard was entitled *American Standard Method of Marking Compressed Gas Cylinders to Identify Content.* The change in title and scope was desirable since these containers are frequently used for storage and handling of materials other than compressed gases.

In this revision the standard has been expanded to include a reference to containers intended for use in international trade. At a conference sponsored by the International Organization for Standardization (ISO), a resolution was adopted recommending to the participating organizations that each one adopt a standard for marking compressed gas containers, and that these standards include a common reference to the marking of containers for use in international trade. In principle the conference concurred upon the use of legend as a basic method for indicating the material contained and rejected proposals to use colors for that purpose.

The American Standard as recently revised is in complete harmony with the recommendations of the International conference. It is a very brief standard and is quoted in full, as follows:

1. Scope

1.1 Requirements for marking portable compressed gas containers, not exceeding 1000 pounds water capacity, to identify the material contained.

2. Definitions

2.1 A portable compressed gas container, for the purposes of these standards, is any container having a water capacity of 1000 pounds, or less, that is constructed in accord with the specifications of a recognized authority, (such as the specifications of the Interstate Commerce Commission, the Unfired Pressure Vessel Code of the ASME, the API-ASME Unfired Pressure Vessel Code, etc) and intended to contain a compressed or liquefied gas, as defined in the Regulations of the Interstate Commerce Commission. Containers of commodities that

F. R. Fetherstone is Secretary-Treasurer, Compressed Gas Association, Inc. Vice President, Liquefied Petroleum Gas Association, Inc.

are exempt from regulation by Federal or State authorities are not included.

3. Marking of Containers

3.1 Compressed gas containers shall be legibly marked with at least the chemical name or a commonly accepted name of the material contained. Marking shall be by means of stenciling, stamping, or labeling, and shall not be readily removable.

3.2 Wherever practical the marking shall be located at the valve end and off the cylindrical part of the body.

3.3 The height of the lettering shall be not less than one twenty-fifth (1/25) of the diameter of the container with a minimum height of one-eighth (⅛) inch.

4. Marking of Containers for use in International Trade

4.1 Compressed gas containers for use in international trade shall be legibly marked by means of stenciling, stamping, or labeling and as noted in 3.2, 3.3, 4.2, and 4.3. Such markings shall not be readily removable.

4.2 With the name of the material contained in the language of the country in which the container is charged.

4.3 With the international chemical formula, or other agreed abbreviations, as follows:

Acetylene	C_2H_2
Air	AIR
Ammonia	NH_3
Argon	Ar
Boron trifluoride	BF_3
Butane, Propane or their mixtures	LP-Gas or LPG
Carbon dioxide	CO_2
Carbon monoxide	CO
Chlorine	Cl_2
Coal gas	GDV
Cyclopropane	(no formula)
Dichlorodifluoromethane	CCl_2F_2
Difluoroethane	$C_2H_4F_2$
Difluoromonochloroethane	$C_2H_3ClF_2$
Ethane	C_2H_6
Ethyl bromide	C_2H_5Br
Ethyl chloride	C_2H_5Cl
Ethylene	C_2H_4
Ethylene oxide	C_2H_4O
Fluorine	F_2
Helium	He
Hydrogen	H_2
Hydrogen chloride	HCl
Hydrogen cyanide	HCN
Hydrogen fluoride	HF
Hydrogen sulphide	H_2S
Illuminating gas	GDV
Krypton	Kr
Methane	CH_4
Methyl bromide	CH_3Br
Methyl chloride	CH_3Cl
Monochlorodifluoromethane	$CHClF_2$
Natural gas	MET
Neon	Ne
Nitrogen	N_2
Nitrogen peroxide	N_2O_4
Nitrosyl chloride	NOCl
Nitrous oxide	N_2O
Oxygen	O_2
Phosgene	$COCl_2$
Propane, Butane or their mixtures	LP-Gas or LPG
Propylene	PRY
Sulphur dioxide	SO_2
Sulphur hexafluoride	SF_6
Town gas	GDV
Vinyl chloride	C_2H_3Cl
Xenon	Xe

5. Regulations

5.1 None of the requirements contained in this standard are intended to conflict with or to supersede Federal or State Regulations such as the following:

5.1.1 Regulations of the Interstate Commerce Commission for the Transportation of Explosives and Other Dangerous Articles by Land and Water in Rail Freight Service and by Motor Vehicles (Highway and Water);

5.1.2 Regulations of the U. S. Coast Guard for the Transportation, Storage or Stowage of Explosives or Dangerous Articles or Substances and Combustible Liquids on Board Vessels;

5.1.3 The Regulations of the Food and Drug Administration for the Enforcement of the Federal Food, Drug and Cosmetic Act.

Limitations of Color

American Standard Z48.1—1954 makes no reference to use of colors. Since this method of indicating container content is frequently proposed, it seems fitting to comment upon that subject. There are proponents of color coding who feel that it has merit and should not be overlooked. Such proposals have frequently been discussed at meetings of safety groups, societies with some interest in the field of compressed gases, laboratory technologists, anesthetists, and others whose opinions reflect a limited experience when considered in the light of the broader fields of use for all compressed gases. Certain governmental agencies have been strong proponents for the use of color coding, but even the largest users of compressed gases among them are consumers of a small percentage of the commodities that are normally charged into compressed gas containers.

There are more than 60 compressed gases that are shipped or stored in the types of containers that we are discussing, and there are only seven primary colors. This means that in order to utilize color for identification purposes, combinations of colors would have to be employed. Also, various shades of the same color would have to be used.

Such use of color would introduce additional possibility of error in determination of cylinder content, and for several reasons. The people who use compressed gases would have to learn what the various color combinations mean. This involves a matter of education, the effectiveness of which would vary with the abilities of each person.

Even if every person had the same degree of visual acuity or color perception, there would be a wide variation in the accuracy with which a color coding system would be translated. People do not all have the same degree of color perception. In fact, many are totally color blind.

We know also that painted cylinders used in locations where they were exposed to impure industrial atmospheres have actually changed color due to reaction between the polluted atmosphere and the cylinder paint. While this is admittedly unusual, it is eliminated as a source of error when the color of the container is not employed to denote its content. It

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Small Outlay, Big Return

IT'S DIFFICULT to measure safety in dollars, but for less than $100 Eitel-McCullough, Inc., San Bruno, Calif., manufacturer of electron-power tubes, has come up with two projects that so far have reached all Eimac employees and their families, the San Francisco Bay area television audience, and many newspaper readers in the area.

During January and February, Eitel-McCullough, Inc., ran an Eimac Junior Safety Poster contest. The contest was open to all employees' children under 12 years of age.

Newspapers in the area were interested in the participation of A. C. Blackman, chief of the California Division of Industrial Safety; Tom Burke, director of the Western Regional Office of the National Safety Council; L. E. Unger, plant safety engineer for the Ford Motor Company in Richmond, Calif.; and Willard Engvall, superintendent of the local elementary school district, all of whom served as contest judges.

The fifth judge was Pete Abenheim, Captain Fortune of San Francisco's station KPIX-TV. Through Mr. Abenheim's interest and cooperation, the contest winners were invited to appear on his children's participation program to receive their awards.

More than 100 children entered, drawn by the prizes, which included cameras with flash attachments and junior walkie-talkie sets; the prospect of appearing on television; and a conducted tour of the plant.

Eimac's second safety project was a parody on the popular radio and television program, *Dragnet*, which was tape recorded and played over the plant public address system and printed in the company publication, *Eimac News*. Special arrangements to use the *Dragnet* theme and format were made with Jack Webb and Mark VII Productions.

The total cost of the contest was exactly $99. This included the six children's prizes at $10 each, gifts for the judges, and circus tickets for each child who entered the contest. The *Dragnet* parody was made at the plant and the only cost was for tape, which can be used again. For this, Eitel-McCullough, Inc., bought a large portion of good community relations, employee enthusiasm and a lot of safety education.

Captain Fortune (Pete Abenheim) of KPIX-TV helps Eimac's poster contest winners show entries to San Francisco Bay Area television audience.

Bill Eitel (left) and Jack McCullough, president and vice-president of Eitel-McCullough, Inc., played host to the contest winners during part of their tour of the company's plant.

Attention was divided between the camera and a detail of tube production during a conducted tour of the Eimac plant. The children found the plant tour one of the most exciting features of the contest.

FORTY YEARS AGO

The Council's First Birthday

CHICAGO'S Hotel LaSalle, which will house the meetings of four sections of the 42nd National Safety Congress, had no difficulty in accomodating the entire Third Congress which met there October 13, 14 and 15, 1914. The National Council for Industrial Safety, organized at the Congress held in New York a year before, was reporting on its first twelve months of operation.

Woodrow Wilson was president of the United States. Overseas, World War I was settling into a long stalemate after the German advance had been checked at the Marne. Officially, the U. S. A. was neutral but its citizens were watching the fight with conflicting sympathies.

Sensation of the sports world in 1914 was the performance of the Boston Braves who ran away with the National League race and downed Connie Mack's once invincible Athletics in a World Series that old time fans still talk about. The Braves were putting the finishing touches on the A's the day the Congress opened.

Judging from the Congress Transactions of 1914, the war was not conspicuous in the thoughts of the Congress delegates. Prohibition and woman suffrage were much more immediate problems.

At
Hotel La Salle
CHICAGO'S FINEST HOTEL
There is a spirit of real hospitality and a homelike atmosphere of comfort and contentment.
Unobtrusively, quietly, considerately, you are served by a great family of capable employees and executives working harmoniously together year in and year out with just one great objective—the good will and satisfaction of the guest.
La Salle at Madison Street
ERNEST J. STEVENS, President
Earl L. Thornton, Vice-Pres. and Manager

There was an echo of the war in Europe in the address of Dr. John Price Jackson, then Pennsylvania's Commissioner of Labor and Industry, who had been in Germany when war broke out and watched the mobilization of the mighty German war machine. Dr. Jackson was received courteously throughout Germany and spoke highly of their neat, efficient factories and inspection systems but he could not ignore the unfortunate influence of the military group in many phases of German life.

Presiding at the Annual Meeting on Tuesday morning, October 13, was Robert W. Campbell, head of the legal department of Illinois Steel Company and first president of the Council. An important item of business was changing the name of the organization to National Safety Council, leaving out *Industrial*. The change was made both for the sake of brevity as well as in recognition of the growing traffic problem.

The report of William H. Cameron, secretary and treasurer, for the fiscal year ending June 30, 1914 (8½ months of operation) showed total receipts of $17,344.57 and expenditures of $17,319.54. Cash on hand amounted to $50.08, less an overdraft at the bank of $25.03. Included in the income was more than $2,000 advanced by officers for current expenses, "to be repaid when funds have accumulated." (It was.)

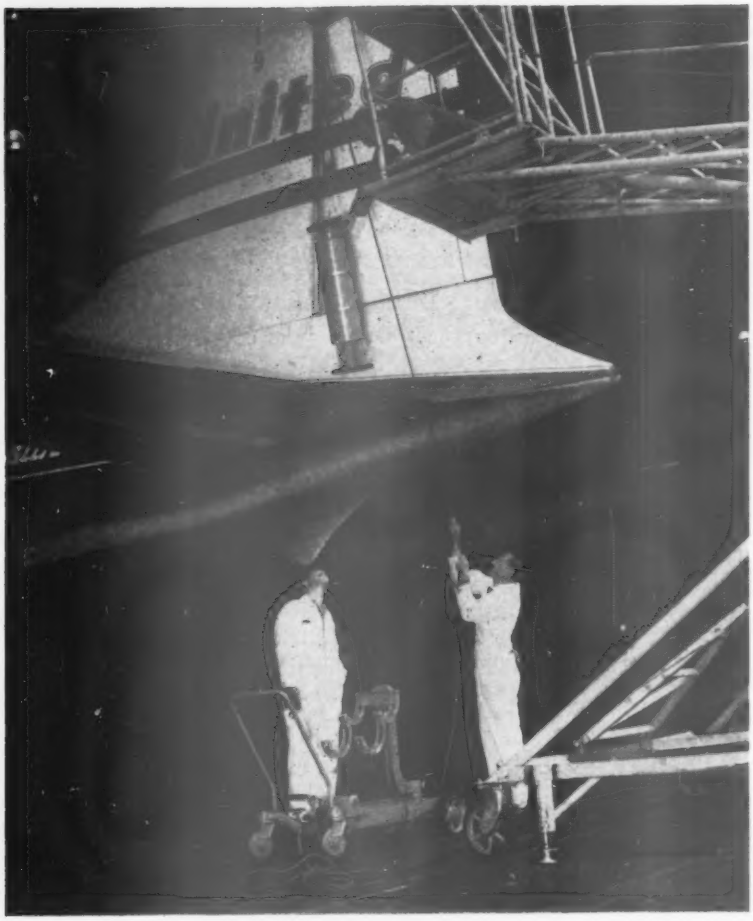
Number of members at the end of the first year was 731, including 10 in Canada and four in Great Britain.

From the beginning, the Council had recognized the importance of local safety councils affiliated with the national body and providing a medium for community effort in accident prevention. During the first year 15 councils were organized.

Development of a sectional plan of organization, recommended at the second Safety Congress, was approved and many of the Council's present sections were organized during the following year.

On the Banquet program were four scheduled speakers in addition to the toastmaster who, in those days, often made a full-length speech, and a few matters of Council business. As you may suspect, that banquet wasn't finished by 9:30.

Back in 1914 there was hardly any safety equipment beyond work clothing and foundry shoes and no organized exposition. If any manufacturer had equipment to sell, he displayed samples in his room. At meetings there were display boards with pictures of elementary machine guards and photos of actual injuries—some of them rather gory.



Portable X-ray unit for aircraft inspection at San Francisco Maintenance Base of United Air Lines being hoisted into position on a DC-6 Mainliner. X-ray operator assisted by mechanics aligns radiographic tube over rudder trim-tab mechanism.

Check Planes with Portable X-ray

A PORTABLE X-RAY UNIT for swift, searching inspection of interior mechanisms and structural parts of aircraft is the newest aid in overhauling Mainliners at the San Francisco "push-button" maintenance base of United Air Lines.

Although smaller than standard medical X-ray units, the portable machine has greater penetrating power. It enables United's mechanics to examine relatively inaccessible areas, such as the juncture of wings and fuselage, without peeling away exterior metal "skin."

Concealed mechanisms of the landing gear and other components are easily eyed with the radiographic device. It also is used to peer into incidental parts, such as electric plugs, which, if opened, would be hopelessly damaged.

Since overexposure to X-radiation is harmful, United permits no one but the protected machine operator to go near an aircraft undergoing X-ray inspection. The area is roped off, posted with danger signs and marked with red lights. Mechanics subsequently "read" the X-ray negatives.

The portable X-ray unit is manufactured by the C. H. F. Muller Company of Hamburg, Germany, and distributed in this country by the North American Philips Company, Inc., under the trade name "Norelco."

Cities Receive Paper Cups For Defense Training

NINETY-SIX CITIES in critical target areas designated by the Federal Civil Defense Administration are being presented with 25 million paper cups and containers for civil defense training purposes by the Paper Cup and Container Institute, Inc., trade association of the paper cup industry. Distribution of these items started August 16, and required more than a month to complete.

The paper cups and containers are the types which would be used to feed the homeless, serve rescue workers and provide utensils for emergency hospitals and first-aid stations in the event the cities were bombed or suffered any other large scale disaster. The only reservation is that the supplies be used only by Civil Defense authorities or assisting organizations, and not turned over to other organizations for social affairs not related to Civil Defense. The Institute was, of course, restricted in making its offer only to those cities declared by the Federal Civil Defense Administration to be located in critical target areas.

Presentation of these paper products to 96 cities marks the second phase of the paper cup industry's contribution to Civil Defense. In December 1950, before Civil Defense was fully organized in some communities, but with the cooperation of the Federal Civil Defense Administration and the American Red Cross, the industry set up stockpiles of 25 million cups and containers of various types in warehouses at 20 points near critical target areas.

Stonehouse SIGNS

FOR INDUSTRIAL ACCIDENT PREVENTION

Most people sometimes forget—and it's a dangerous oversight to forget Safety. "I forgot" is an all too common alibi for an accident.

STONEHOUSE SIGNS

To help workers *remember*, post Stonehouse Safety Slogans and Reminders signs. Just the few words on any of them help to promote safety.

The tendency to forget should not be overlooked—it's serious. Teach your workers to cultivate the practice of safety by reminding them to *remember* its blessings.

Have you our Catalog? 64 pages, in full color. It's free on request.

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"Signs Since 1863"

Denver 4, Colorado

ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

Wire from WASHINGTON

By HARRY N. ROSENFIELD
Washington Counsel, National Safety Council

THE CONGRESS adjourned after being in session almost eight months. Final action was taken positively, and negatively, on a series of measures affecting safety in many fields.

Marine Safety

S. 3464, to effectuate the Agreement for the Promotion of Safety on the Great Lakes, through radio, became Public Law 590. The Federal Communications Commission which had issued a proposed rule-making procedure to implement this agreement which comes into force November 13, 1954, promulgated its final regulations.

S. 2453, to implement the International Convention for Safety of Life at Sea through radio installations and operators on certain ships between 500 and 1600 gross tons, became Public Law 584. Under its provisions, the Federal Communications Commission deferred its effective date until January 1, 1955, in order to give necessary time for providing equipment standards and equipment to meet the statutory requirements.

H.R. 8647 was passed by both Houses of Congress, to provide that there should be no change in the present situation affecting vessels less than 15 tons, until some more basic agreement could be reached on proposed safety changes, as indicated in H.R. 7066 and H.R. 8416.

The Merchant Marine Council announced the holding of public hearings upon proposed changes in the Navigation and Vessel Inspection Regulations.

Coal Mines

H.R. 270 became Public Law 642, and authorizes an appropriation of half a million dollars for the control and extinguishment of outcrop and underground fires in coal formations.

The Bureau of Mines proposed changes in a series of its regulations, concerning various types of respirators, electric mine and electric cap lamps, flame safety lamps, portable methane detectors, signaling devices, multiple-shot and single-shot blasting units, diesel mine locomotives, and dust collectors, and the testing of gas masks.

Fire Safety

The President of the United States issued Proclamation 3063, designating the week beginning October 3, 1954, as "Fire Prevention Week," called upon all citizens to initiate a year-around campaign against the waste caused by preventable fires, and urged widespread cooperation in the observance of Fire Prevention Week.

H.R. 6393 was approved, granting Congressional consent to the South Central Interstate Forest Fire Protection Compact among five states, for their cooperation in the prevention and suppression of forest fires.

Aviation

After four months of hearing on S. 2647 a bill to rewrite to Civil Aeronautics Act of 1938, the Senate Committee on Interstate and Foreign Commerce decided to lay the matter over until the next session of Congress.

In his report to the Senate, Committee Chairman Bricker stated that "no radical changes in basic organizations of government agencies concerned with the aviation industry seems to have been indicated by the weight of the testimony," but said that some amendment was necessary as to "the regulatory scheme." The Committee was given authority to file a staff study on aviation after the adjournment of Congress.

THE SPAN OF LIFE is short, the end universal; and the tinge of melancholy which accompanies decline and retirement is in itself an anodyne. It is foolish to waste lamentations upon the closing phase of human life. Noble spirits yield themselves willingly to the successively falling shades which carry them to a better world or to oblivion. —Winston Churchill.

Industrial Safety

The Interstate Commerce Commission deferred from September 1, 1954, until January 1, 1955, the effectiveness of its earlier order prescribing new rules and instructions for locomotive inspection.

Home Safety

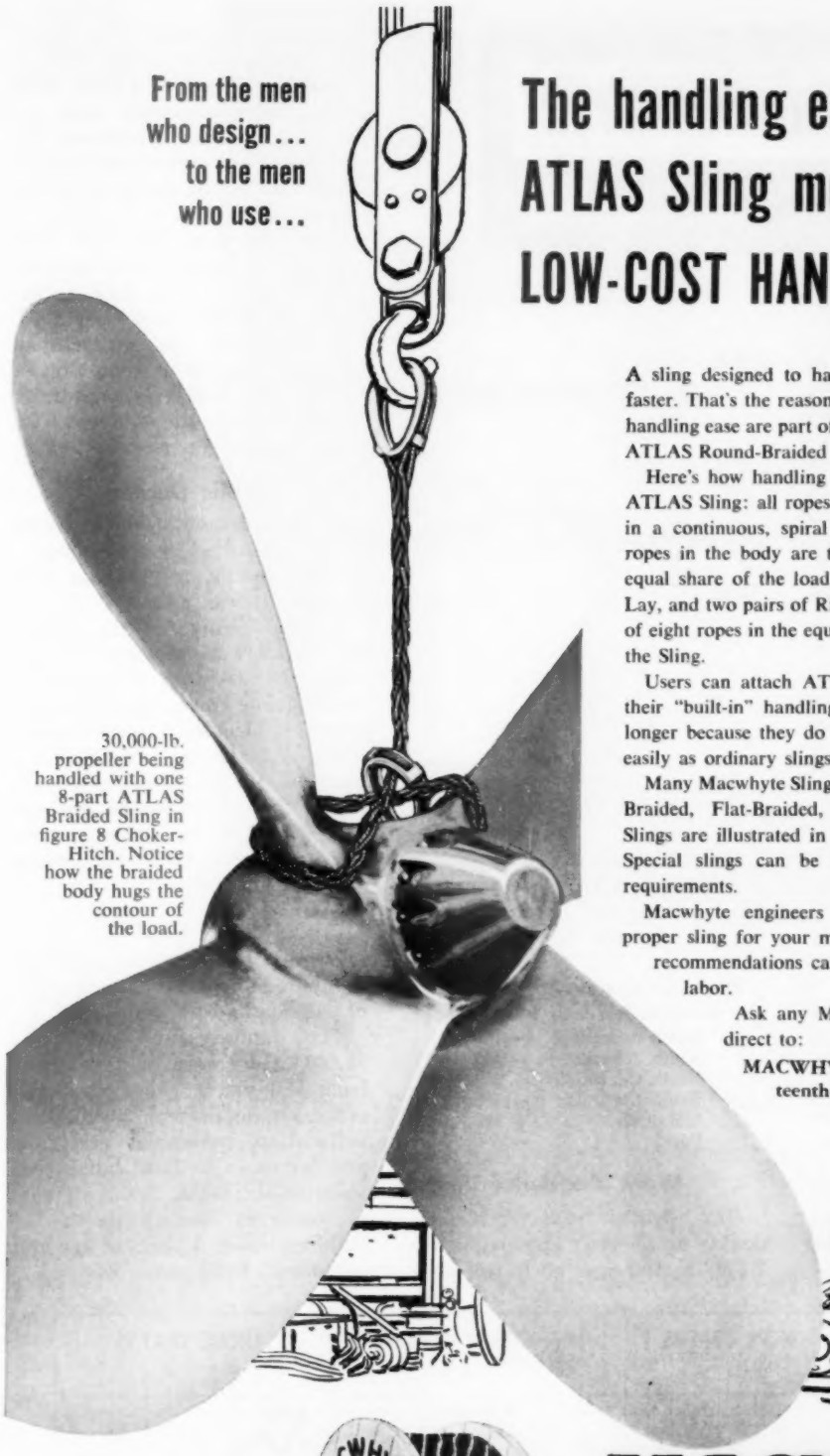
S. 3379 was approved by the Congress and became Public Law 629, to amend the Flammable Fabrics Act, but was amended so as to apply not specifically to plain surface scarfs but to certain other described fabrics and wearing apparel which are not highly flammable.

Highways

The President announced the appointment of a special advisory committee, under the chairmanship of General Lucius D. Clay (ret.), to help him solve state-federal problems involved in his proposal for a $50 billion highway improvement program. The President requested the committee to submit a report prior to the opening of the next session of the Congress which takes place on January 5, 1955.

From the men who design... to the men who use...

The handling ease of an ATLAS Sling means safe, fast, LOW-COST HANDLING



30,000-lb. propeller being handled with one 8-part ATLAS Braided Sling in figure 8 Choker-Hitch. Notice how the braided body hugs the contour of the load.

A sling designed to handle easily will handle loads faster. That's the reason why flexibility, lightness, and handling ease are part of the basic design of Macwhyte ATLAS Round-Braided Slings.

Here's how handling ease is built into the finished ATLAS Sling: all ropes in ATLAS Slings are braided in a continuous, spiral path. Ropes are endless—all ropes in the body are the same length and carry an equal share of the load. There are two pairs of Left Lay, and two pairs of Right Lay ropes—making a total of eight ropes in the equally balanced-braided body of the Sling.

Users can attach ATLAS Slings faster because of their "built-in" handling ease. And these Slings last longer because they do not snarl, kink, or curl up as easily as ordinary slings.

Many Macwhyte Slings of standard design in Round-Braided, Flat-Braided, Single-Part, and Grommet Slings are illustrated in the Macwhyte Sling Catalog. Special slings can be designed to meet individual requirements.

Macwhyte engineers will gladly recommend the proper sling for your material handling needs. Their recommendations can save you time, money, and labor.

Ask any Macwhyte distributor, or write direct to:

MACWHYTE COMPANY, 2902 Fourteenth Avenue, Kenosha, Wisconsin

Send for Bulletin 5308 containing load rating tables, illustrations, and general information on slings.

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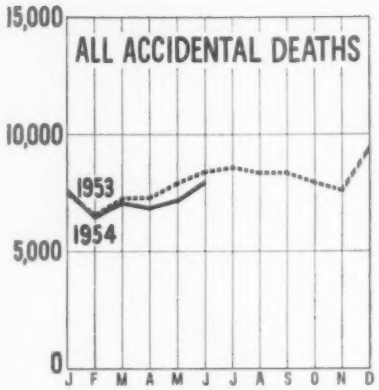
1064-S

THE ACCIDENT BAROMETER

Prepared by the Statistical Division, National Safety Council

ACCIDENTAL DEATHS in June totaled approximately 7,900, a decrease of 6 per cent from June, 1953. Most of the reduction occurred in deaths from home and motor-vehicle accidents, but deaths from work accidents also were less numerous. Fatalities from public non-motor-vehicle accidents showed a small increase over last year.

The six-month death total was 42,800, a decrease of 4 per cent from 1952. All classes shared in the reduction with the largest decrease recorded in motor-vehicle accident deaths.



	1954	1953	Change
June	7,900	8,400	−6%
Six Months	42,800	44,800	−4%

Motor-Vehicle Deaths

There were approximately 2,850 deaths from motor-vehicle accidents, a reduction of 8 per cent from June, 1953. Compared to 1952, it was a decrease of 7 per cent.

Deaths during the six months totaled about 16,300, a reduction of 6 per cent from 17,250 in 1953. The death rate per 100,000,000 vehicle miles was 6.1, a reduction of 8 per cent from the 1953 six-month comparable rate of 6.6.

Of the 46 states reporting for six months, 29 had fewer deaths than last year, 2 had the same number and 15 had more deaths.

Reporting cities with populations of more than 10,000 had a reduction of 7 per cent for June and 9 per cent for the first half of the year.

Regional changes from 1953 in the six-month death totals were:

North Atlantic	− 8%
South Atlantic	−11%
North Central	− 3%
South Central	+ 1%
Mountain	+ 1%
Pacific	−14%

Work Accidents

June deaths from work accidents numbered approximately 1,200, a decrease of 8 per cent from June last year. The January-June death total was 6,800, a reduction of 7 per cent from 1953.

The June frequency rate per million man-hours in eighteen sectional accident prevention contests conducted by the National Safety Council was 5.51, a decrease of 16 per cent from last year. The June rate for plants in community council contests was 8.65, an increase of 21 per cent over 1953. The six-month rate in sectional contests was 5.53, a reduction of 11 per cent while in community council contests the rate was 6.68, a reduction of 8 per cent.

Public Deaths

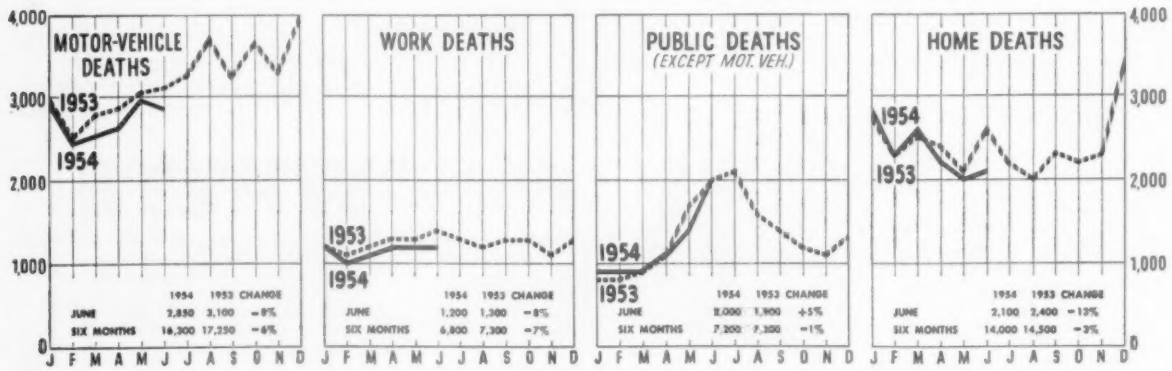
Public non-motor-vehicle deaths in June resulted in approximately 2,000 deaths, or 100 more than in June a year ago.

Deaths during the six months totaled 7,200, a reduction of 1 per cent from last year. Decreases in deaths from drownings and transportation accidents were nearly offset by increases in deaths from burns and falls. Increases were reported for persons in the age groups 45 to 64 years and 65 years and over. Other age groups showed decreases.

Home Deaths

Deaths from home accidents numbered about 2,100, a reduction of 300 deaths from June, 1953.

The January-June total was 14,000, a decrease of 3 per cent from last year. There were decreases in deaths from mechanical suffocation, poisonings and falls and increases in fatal burns and firearms accidents. Small increases occurred among deaths of children under 5 years of age and persons 45 to 64 years old.



B R E C K

FOUR WAYS TO PROTECT SKIN FROM INDUSTRIAL DERMATITIS

BRECK pH7 PROTECTIVE CREAM protects the hands against irritants such as lubricating oils, cutting compounds, tar, greases, rubber dust, aromatic and hydrocarbon solvents, fiberglass, paint and iron dust. It forms a non-sticky, invisible film over the skin. Breck pH7 Protective Cream is easily applied. It is easily removed with Breck Hand Cleaner or soap and water.

BRECK WATER RESISTANT CREAM protects the skin against the action of water and water solutions such as liquid coolants, emulsified cutting oils, mist and spray from alkali baths and plating solutions, cement and lime. It covers the skin with a light, protective film which is not slippery or sticky. Breck Water Resistant Cream has a pH value of 8.

BRECK HAND CLEANER helps eliminate the use of harsh, gritty, highly alkaline or defatting hand cleaners. It does a thorough cleansing job, yet is mild and non-irritating to the skin.

BRECK WORK CREAM is used after exposure to degreasing materials and at the end of a day's work. It substitutes fatty materials for the natural skin oils which have been removed. In this way Breck Work Cream helps keep the hands smooth, pliable and lubricated.

A Breck Industrial Preparations Booklet will be forwarded to you upon request.

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THE SAFETY VALVE

Why We Stick to Chicago

SEVERAL YEARS AGO a Congress delegate remarked quite emphatically that if the Council continued to hold the National Safety Congress in Chicago, people would stay away in droves.

Well, several Congresses have been held since then and it's just as hard as ever to pack people and exhibits into Chicago's hotels.

It's no secret that a lot of safety people would welcome a change of scenery around Congress time. So would some of the NSC staff. This writer drools when he reads of conventions in such glamor spots as White Sulphur Springs, Biloxi, Carlsbad, etc.

When the Congress used to circulate around the country it was easier to plan the publicity. A collection of pix and literature from the Chamber of Commerce could be worked into a fancy four-page spread about the town that was going to entertain us. It isn't so easy to get lyrical about the home town year after year, or tell delegates anything they don't already know about it.

We must be practical. In most other cities, a lot of people who want to get in couldn't be accommodated. Also, the cost to the Council of setting up the show a few hundred miles away would be pretty steep. Transportion, lodging and feeding cost more than they did when the Congress was held in Atlantic City 15 years ago—ask the chap who scrutinizes expense accounts. Also, proximity makes it possible to have more staff members on hand to take care of details.

So, it looks as though it's going to be Chicago for some years to come.

Freedom of Discussion

NEARLY EVERY PUBLICATION now carries a notice on the contents page to the effect that statements in signed articles are the views of the author, not necessarily those of the publishers. Practically every magazine carries articles with which the editors do not agree completely.

A by-line, of course, does not give an author complete freedom to write what he pleases. Definite standards of accuracy and good taste must be observed, as well as the laws of libel.

Nor can any waiver absolve the editors of all responsibility. Nothing misleading or contrary to the public good must get past the blue pencil.

But the dividing line between truth and error is not always clear cut. If it were, far fewer pages would roll off the presses. There is a vast debatable area where fact and fallacy are scrambled, and there are often emphatic differences of opinion. Anybody who prints anything that isn't axiomatic is sure to get into a hassle. That's one of the things that make the editorial job fascinating.

Recently the NEWS published two articles on a somewhat controversial subject. When we gave the other side a chance to reply to the first article, we received an indignant letter from a reader who warned us that the statement on the contents page and the editorial note which accompanied the article did not relieve us of responsibility for spreading falsehoods which would do "lasting damage."

Now if all the misinformation that appeared in print since Gutenberg's day caused lasting damage, the world would be in a bad way indeed. But in this case we couldn't agree that information would mislead any normal person and freedom of discussion was at stake. And we sometimes wonder how lasting our messages, good or bad, really are.

In This Issue . . .

THIS ENTERTAINING EXCURSION into fantasy by a prominent industrialist pictures a world that safety men would like to see in their time. (Page 102)

* * *

Industrial safety methods that have been successful in the temperate zone will work in the tropics too, but they take longer. In the construction of the Panama Canal, accidents and disease took a heavy toll of life. Now the record for safety and health in the Canal Zone is comparable to that of more favored regions. (Page 104)

* * *

To people of many races and nationalities in many parts of the world goes the credit for the safety accomplishments of Firestone operations in the U.S.A. and overseas. (Page 108)

* * *

To the layman, atomic energy is usually a deep mystery, associated with death and destruction. This article will clarify some of the complicated details and explain the beneficient uses of this new force which is already serving industry. (Page 110)

* * *

Atomic energy, electronics, and many other scientific developments were made possible when the incandescent lamp was developed into a practical device. This month the world is celebrating a great invention and the beginning of an era. (Page 114)

* * *

Down in Indiana, they're doing things in a big way for safety both on and off-the-job. Newest field for safety education is among the Amish and Mennonite people who are now learning to operate tractors and automobiles. (Page 118)

Carman Fish

Another casualty that couldn't have happened with

Hy-Test Steam Hose

HY-TEST® Steam Hose protects workers *two* ways. First, it just *can't* suddenly burst and release scalding, super-heated steam! Second, it's never too hot to handle! Look at its unique construction and you'll see why.

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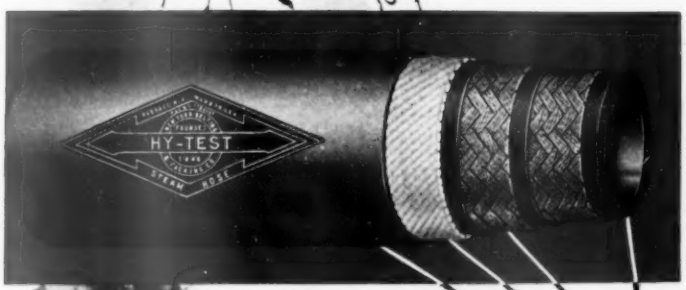
Notice, also, the breaker ply of heavy asbestos cord under the tough, abrasion-resistant cover. This layer of insulation provides a cooler outside surface that makes HY-TEST Steam Hose easier to handle.

For your workers' safety and morale—and long-range economy, too—specify HY-TEST for high pressures! Your nearby NYB&P Distributor has it. If he's not listed in your local classified directory, write to address below.



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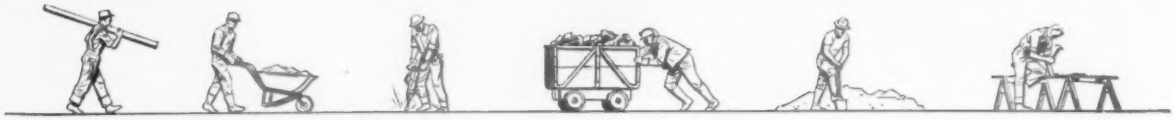

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U. S. Neoprene Rubber for heavy industry. Resists oils, grease, acids. Steel Safety Toes! Shockproof Cushioned Insoles. Also in Tempered Rubber with cleat-type soles for general use.

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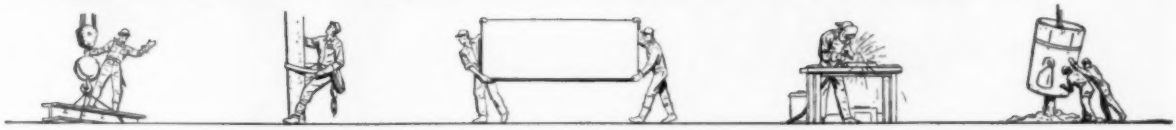

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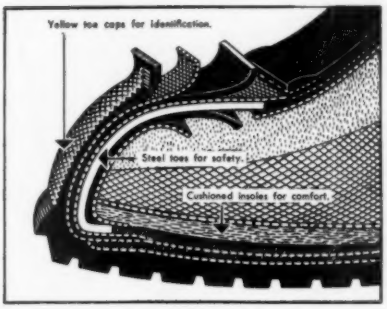

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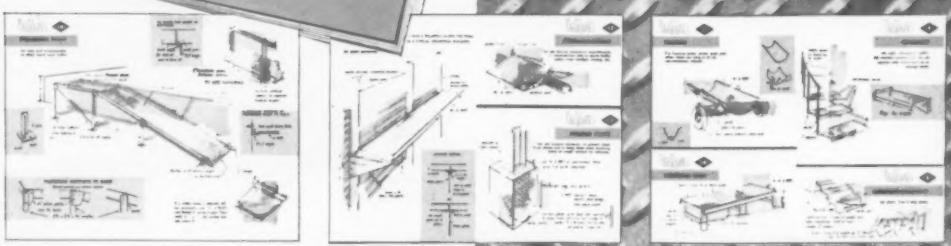

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THREE TYPES of awards are given by the National Safety Council to industrial units in recognition of outstanding performance in accident prevention:

1. **THE AWARD OF HONOR** is available to units whose records, though not perfect, meet rigorous standards of excellence. These standards take into account the previous experience of the unit as well as the experience of the industry in which it operates. A unit must qualify on both frequency rate and severity rate. The Award of Honor is available also to units which complete 3,000,000 man-hours without a disabling injury.

2. **THE AWARD OF MERIT** has similar, but less exacting, requirements. Minimum number of injury-free man-hours needed to qualify is 1,000,000.

3. **THE CERTIFICATE OF COMMENDATION** is available only for injury-free records covering a period of one or more full calendar years and totalling 200,000 to 1,000,000 man-hours.

Details of eligibility requirements may be obtained by writing to the Statistical Division, National Safety Council.

★ ★ ★ ★ ★

The list below includes all Honor, Merit, and Commendation Awards that have been determined since the last issue of NATIONAL SAFETY NEWS. For names of other award winners, see earlier issues.

AWARD OF HONOR

Columbia-Geneva Div., U. S. Steel Corp., Geneva Works.

Continental Can Co., Plant 95, Coffeyville, Kans.

Continental Oil Co., Ponca City, Okla. Two awards: All exploration; Entire company.

Convair Div., General Dynamics Corp., San Diego Div., Plants 1 and 2.

Esso-Standard Oil Co., Linden, N. J., All refining.

Ford Motor Co. Norfolk Assembly Plant.

The B. F. Goodrich Co., Oaks, Pa., Plant.

Humble Oil & Refining Co., Houston, Tex. Two awards: All Wholesale Marketing; all refineries.

Lion Oil Co., El Dorado, Ark. Entire company.

The Pure Oil Co., Chicago. All refining.

Socony-Vacuum Oil Co., New York. All refineries.

Standard Oil Co. (Indiana), Chicago. Two awards: All petroleum; all refining.

Stanolind Oil & Gas Co., Tulsa, Okla. All exploration.

U. S. Rubber Co., Naugatuck, Conn. Footwear.

AWARDS OF MERIT

Allegheny Ludlum Steel Corp., Breckenridge, Pa., Plant.

Aro, Inc., Tullahoma, Tenn., Arnold Engineering Development Center.

Cit-Con Oil Corp., Lake Charles, La. All refining.

Cities Service Oil Co. (Delaware), Bartlesville, Okla. Two awards: All refining; all natural gasoline.

Continental Oil Co., Ponca City, Okla. All wholesale marketing.

East Ohio Gas Co., Sub. Consolidated Natural Gas. All petroleum.

Esso Standard Oil Co., Baton Rouge, La. Entire company.

General Analine & Film Corp., Linden, N. J., Plant, Dyestuffs and Chemical Div.

General Electric Co., Fort Wayne, Ind. Specialty Component Motor Dept.

The B. F. Goodrich Co., Hood Rubber Co., Watertown, Mass.

Great Lakes Pipe Line Co., Kansas City, Mo. All oil pipe lines.

The Gulf Co., Houston, Tex. Two awards: All exploration; all producing.

Gulf State Utilities Co., Beaumont, Tex. Entire company.

Hope Natural Gas Co., Sub. Consolidated Natural Gas. All natural gasoline.

Industrial Rayon Corp., Cleveland, Ohio, Plant.

F. H. McGraw & Co. Engineers and Constructors, Paducah AEC Plant.

The Magnavox Co., Fort Wayne, Ind. Entire company.

Magnolia Petroleum Co., Dallas, Tex. All refining.

Mine Safety Appliances Co., Gallery, Pa., Plant.

Monongahela Power Co., Fairmont, W. Va. Entire company.

National Lead Co. of Ohio, Cincinnati, Ohio.

The Ohio Oil Co., Findlay, Ohio. All retail marketing.

The Phillips Petroleum Co., Bartlesville, Okla. Two awards: All wholesale marketing; all drilling.

The Pure Oil Co., Chicago. Entire company.

St. Louis Public Service Co., St. Louis, Mo. Entire company.

Shell Oil Co., New York. Four awards: Entire company; all refineries; all producing; all exploration.

Sinclair Refining Co., New York. Two awards: All refineries; all producing.

Skelly Oil Co., Tulsa, Okla. Natural gasoline and gas div.

Socony-Vacuum Oil Co., New York. Entire company.

Standard Oil Co. of Calif., San Francisco. All drilling.

Standard Oil Co. (Indiana), Chicago. All wholesale marketing.

Standard Oil Co. of Ohio, Cleveland. Entire company.

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INDUSTRIAL HEALTH

Abstracts of current literature on Industrial Hygiene, Medicine, and Nursing

BY F. A. VAN ATTA
Industrial Department, NSC

Nickel Carbonyl

Nickel poisoning 2. Studies on patients suffering from acute exposure to vapors of nickel carbonyl, by F. William Sunderman and John F. Kincaid. The Journal of the American Medical Association, 155:889-894 (July 3, 1954).

IN A PREVIOUS STUDY on experimental animals, the LD50 value for 30 minutes exposure to nickel carbonyl was shown to be 10, 35, and 270 parts per million by volume in air respectively for mice, rats and cats. It was also shown that the toxic effects were not cumulative and that tolerance could be developed after exposure to sub-lethal concentrations. The animal studies also indicated that the administration of dimercaprol (BAL) to rats increased their tolerance to nickel carbonyl by a factor of two.

There have been a few descriptions in the literature of the pathology of acute poisonings by nickel carbonyl in humans. The main changes are in the lungs, liver, and brain, and the cause of death is generally regarded as lung damage.

Relationship to Cancer

A high incidence of cancer of the respiratory passages has been recognized among workmen in nickel refineries. This was first observed by Baader in 1924 and a study in the South Wales nickel area indicated that 34 per cent of the cases of cancer of the respiratory organs between 1907 and 1934 occurred in nickel workers.

In the incidents studied here, a total of 100 men were exposed to nickel carbonyl during the repair of a reactor in a large oil refinery. Of the 100 exposed, 31 required hospitalization and two died. The men were exposed to nickel carbonyl in the absence of carbon monoxide so that the cases are pure nickel carbonyl poisoning.

Symptoms of Poisoning

The men typically showed dizziness and headache and nausea and vomiting occurred in more than one-half of the hospitalized cases. Most of the men felt a sense of constriction in the chest with shortness of breath and cough, unproductive in all but one instance. The more severe and delayed stage usually started with paroxysmal coughing and was delayed for 10 hours to eight days after the original exposure. The universal complaint was extreme weakness and fatigue. Respiration could not be maintained without oxygen therapy in a high percentage of the cases and the breathing was generally rapid, shallow and panting in type.

Dimercaprol Used

All of the hospitalized patients except the one who died four days after exposure were given dimercaprol at 2.5 milligrams per kilogram of body weight every four hours for six doses total. None received the dimercaprol earlier than the fifth day because the diagnosis was not made until four days following the exposure.

Convalesence was protracted in practically all of the instances. Two months after exposure, they still complained of unusual fatigue on exertion and had unusually high pulse rates.

The dimercaprol therapy increased the concentration of nickel in the urine and decreased the concentration in the blood. The normal concentration of nickel in the urine is taken as 1.1 microgram per 100 milliliters with a standard deviation of ± 0.85. The concentrations are much higher after exposure to nickel carbonyl. In two instances in this series, a man with exposures slight enough that no symptoms were shown had urinary nickel concentrations over 10 micrograms per 100 milliliters in the first eight hours after the exposure. Some of the more severely exposed men showed concentrations of 30 to 50 micrograms per 100 milliliters five days after the exposure.

It is felt that the use of dimercaprol was beneficial in these cases and probably was life-saving in several.

Overweight and Heart Disease

Obesity and Degenerative Heart Disease, by Ancel Keys. The American Journal of Public Health 44:-864-871 (July, 1954).

IT IS GENERALLY ASSUMED that overweight is Public Enemy No. 1 of American health. This is based on the experience of life insurance companies which have reported for half a century or more that the overweight policyholders had mortality rates of 35 per cent to 50 per cent higher than the average of all policyholders.

According to the analyses of Dublin and Marks, the overweight have excess mortality from diabetes, gall bladder and bile duct diseases, appendicitis, kidney diseases, brain hemorrhage and liver diseases, followed by heart disease, hernia and intestinal obstruction. The excess mortality due to heart disease is impressive because heart disease accounts for almost half of all adult deaths not caused by violence.

—*To page 234*

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light weight · greater visibility · no blind spots
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Chemical cartridges. For organic and inorganic gases.

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Double sponge, for cool, water-washed breathing.

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With sponge filter for water-cooled breathing.

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Equipped with "Nod & Shake" fog-proof, gas-tight goggles.

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COVER'S
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Gas-tight, fog-proof. Wear with any respirator.

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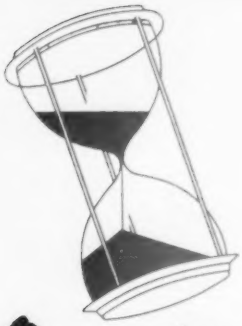

Operation Live Longer

(From page 119)

and barrel. Today their off-the-job safety program is the best in the district.

Anderson was another Hoosier hot spot. The Delco-Remy Division of General Motors accepted the kits with open arms. Fred C. Yelton, director of safety, arranged with Captain Beverforden for the assignment of two state troopers—Lucian Bever and Paul Doherty.

During the month of April, Bever and Doherty worked day and night, talked to approximately 3,500 Delco-Remy employees in safety meetings—1,400 of whom were safety supervisors. Needless to say, the program clicked. The company house organ carried stories on the program activities and the employees themselves were behind the idea 100 per cent.

In the Evansville area Trooper Don Smiley had a field day. The Indiana Limestone Institute in Bedford represented a merger corporation of 22 different quarries and mills in the Bedford and Bloomington areas. N. R. Tovey, safety director, had been the industry's representative at the White House Conference on Highway Safety, and met Smiley three-quarters of the way. Tovey took the kits, worked out a meeting program for supervisors and in three weeks' time had 6,000 employees taking an active part in the program.

International Harvester Company in the Evansville area "cottoned" to the kit and put it to work. One of the "Click" sheets put out in a subsequent issue carried a matchbook cover from International Harvester's Evansville plant. It pointed out that "safety is everybody's buisness—at work, at home, on the road." As Trooper Smiley put it, "These were double safety matches."

Trooper Bert Reed had himself a time. In short order he organized the off-the-job program in 19 different industries — large and small. Biggest were Cummins Diesel at Columbus with 2,900 employees, and the Arvin Industries with approximately the same number of workers scattered over five locations.

As Reed reported, "Arvin couldn't wait to get started." They asked him to talk to their foremen at a luncheon meeting, followed this up with a panel discussion at the plant safety meeting. H. William Prentice, Arvin's director of safety and personnel, and Frank Mattox, plant superintendent at Seymour, both report that interest is growing monthly in the theme program, with employees asking for assignments.

Pop down to Indianapolis and you walk into the center of Hoosierland. You also walk into a hotbed of safety enthusiasm. Trooper Robert Reeves has responsibility for the industrial kit in this area, but he also can call on Captain Beverforden, Joe Lingo, Indiana's Governor Craig and a host of topflight personalities, who are practically right on the spot.

We sat in at a luncheon at the Chrysler Corporation plant in the Hoosier State capital. The occasion was the awarding of plaques to Chrysler for their work in the May vehicle check program. But R. S. Bright, Indianapolis plant manager, added a reciprocal note, when he gave title to 11 new Dodge sedans for use by the Indiana State Patrol's educational unit. The glistening white cars represented thousands of dollars in cash but the troopers got a big lift from the fact that industry was backing the program all the way.

Frank Jessup, superintendent of the Indiana State Patrol, and Professor Lingo, both echoed the sentiment of the assembly, when they stated: "With this kind of backing, how can we miss?"

Wilbur Shaw, president and general manager of the Indianap-

—To page 188

Troopers explain use of Operation Live Longer traffic safety kit to safety supervisors. In one plant—Delco-Remy Division of General Motors Corporation, Anderson—troopers talked with 1,400 foremen. Industrial Indiana went all-out in off-the-job statewide accident prevention program.

Indiana's Governor George N. Craig gets pledge of support for safety program from Grand Chancellor of Indiana Knights of Pythias, Guy S. Harris (left).

ONLY BALLYMORE Safety Step LADDERS GIVE YOU ALL THESE ADVANTAGES!

GUARD RAILS
Users feel safe up on Ballymore Ladders, surrounded by sturdy guard rails which *really* support and protect.

SAFETY TREAD
Special non-skid design provides sure footing all the way.

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Rubber-tipped feet at extremities of ladder eliminate any tendency to wobble, roll, or "kick out".

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All welded-steel heavy-duty construction; no rivets or bolts, nothing to loosen or wear out.

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Tubular cross-section assures high strength with light weight.

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Treads can't clog with dirt, grease, or liquids.

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when you step off, ladder rolls easily on four large-diameter casters.

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Just step on a Ballymore and it locks to the floor. No levers to pull, no wing nuts, no locks. Nothing to handle or think about. Acts for you.

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NS-10/54

Submit 561 Entries In Essay Contest

A 21-INCH TABLE MODEL TV set was the grand prize in an essay contest sponsored by Caterpillar Tractor Company for children of employees at the company's plants in Peoria and Joliet, Ill.; Milwaukee, Wis.; San Leandro, Calif., and York, Pa.

The subject of the contest was "What My Dad's (or Mother's) Safety Means to Me." In addition to the grand prize winner, there were three prize winners at each plant and at the company's General Offices in Peoria. These winners received bicycles, clock radios and table model radios. A total of 561 entries was submitted.

This was the first contest of this kind that Caterpillar has conducted. It was announced in April in the employee magazine, *News and Views*. Between the announcement date and July 1 when entries closed, continuous publicity was carried on through *Caterpillar Folks*, the employee newspaper, on bulletin boards, in the local press, and in mailings to supervisors in the larger plants and all employees in the smaller plants.

Judges were from the company's safety department and school officials in plant communities. Many excellent essays were submitted.

Winner of the grand prize was Jerry Notzke, age 12, of Green Valley, Ill. His stepfather, Morries E. Sumter, works in the Scheduling Division of the Peoria plant. Following is his essay:

My Dad isn't my real father, he is my Step-Dad, but he sure is a swell Dad to me. I think his safety means more to me than it would to most kids 'cause I know how lonesome it can be without a dad. My first dad was killed in Germany when I was 2½ years old. Then Mom and I married this daddy. Now I have a little brother, Michael. We fight, but I like him.

I need my Dad to help me with my studies, play the trombone with me, fix my bike, and for all those nickels and dimes I ask for, and for a goodnight kiss when I say my prayers.

If you haven't got a Dad, you'd really miss those things and I know.

Income tax: The fine for reckless thriving.

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SERIES—1184
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SMALL BUSINESSES and ASSOCIATIONS

By A. M. BALTZER and ROBERT D. CURRIE

Small Business Program Staff
National Safety Council

Small Business Awards

WHAT IS SO RARE as a small *independent* firm winning a safety award? A total eclipse isn't too far from the answer. We recently wrote to NSC award winners having less than 100 employees asking them how they did it. The replies were loaded with good, sound practical suggestions on how a small firm can qualify. Here are some typical remarks:

Our key men continually remind the employees of the hazards involved in their particular job. We give a great deal of attention to improvement in safe guarding machinery.

* * *

We stress safety as a personal responsibility. We repeat the personal rewards of working safely. We find ready response in safety problems from all officers and department heads. There is no lost time in getting action from an employee's suggestion. What success we have enjoyed is based on maintaining interest.

* * *

Each key man knows his job thoroughly and is constantly looking toward the younger employee in pointing out hazards and encouraging safe working practices.

* * *

Any company can profit by listening to the advice of its insurance representative who stimulated the interest of our employees, watched safety pit-falls that might be overlooked and contributed up-to-the-minute ideas that have worked in other plants.

* * *

Our success is the result of three primary factors: 1) supervisory and employee education on the benefits of safety to the individual—2) an active and interested safety committee—3) provision by management of adequate safety devices and controls. 95% of recommendations submitted by the safety committee became effective within 24 hours after submission.

* * *

Through a lot of hard work by all, education on "why safety pays" has really paid off.

Concrete Evidence . . . 7200 Pounds of it!

The Portland Cement Association boasts the heaviest safety trophy known. PCA's cast concrete trophy, highly polished, 8 feet high and 7200 pounds, is earned by members completing one calendar year without a disabling injury.

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"Where there is no vision the people perish." The Portland Cement Association's trophy.

Award-winning plants have used ingenuity in showing off their prize. After installation, it is surrounded with appropriate landscaping and floodlights to enhance its beauty.

Concrete evidence of 1000-Day Club membership in the form of foot-high concrete numerals has recently been made available to all member plants having ever worked 1000 successive safe days. The numerals, bearing the largest number of consecutive accident-free days in even thousands, are mounted atop the PCA safety trophies. Highest to date is 6000 days, which represents 17 consecutive safe years.

IAA Believes in Safety

H. F. (Herb) Reinhard, chairman of our Small Business and Associations Committee has served the International Acetylene Association as secretary for quite a few years . . . he admits it's more than 15. Herb tells us that this Association, founded and chartered in 1898, came into being primarily as an industry effort to promote greater safety in the manufacture and use of acetylene. It has not deviated from that purpose.

The record of IAA in promoting safe practices and fire prevention has been outstanding. It published two safety booklets. Its annual conventions feature safety and fire prevention sessions. It cooperates with the National Safety Council and other groups. IAA members are urged to give talks on fire prevention and safety before meetings of user company safety committees and other groups throughout the country.

Herb feels that an association is missing a great opportunity to be of service to its member companies if it does not help them to promote better safety in their operations and in customer use of their products. He believes that the association is in a uniquely favorable position to do so since it has a good knowledge of their safety problems, the confidence of its members, the means of reaching key executives and of getting them together in a cooperative effort.

New

SAVE 35% TO 80% IN FLOOR CLEANING COSTS

These powerful new machines are typically TENNANT—designed for those tough round-the-clock jobs—built to save you from 35% to 80% in floor cleaning costs. And they're engineered for extra years of service.

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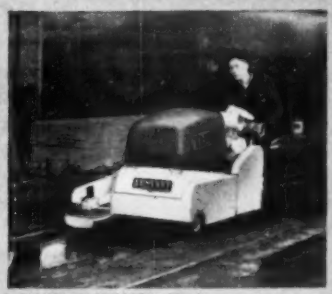

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Books, Pamphlets and Periodicals of Interest to Safety Men

Compiled by Ruth Parks, Librarian, NSC

BOOKS AND PAMPHLETS

Industrial Hygiene

Chemical Methods in Industrial Hygiene, by Frederick H. Goldman and Morris B. Jacobs. Published by Inter-Science Publishers, Inc., 250 Fifth Ave., New York 1. 1953. 274 pages. $3.75.

THIS LITTLE MANUAL is intended as a cookbook type of laboratory directions. It tells in detail what to do and how to do it, without much reference to why you do it in a particular manner. For the substances it covers, it is quite adequate. The analyses are in sufficient detail that one could carry them out without reference to other source of information.

A considerable proportion of the substances which are commonly of importance in industrial hygiene work are covered, although some choosing and elimination obviously had to be done to accommodate the material to the size of the book. It is a little startling, however, to find that no specific reference to such common materials as the gaseous halogens or toluidine.

This would be a very satisfactory text for a laboratory course in industrial hygiene chemistry or satisfactory as specific directions for laboratory technicians in the group of compounds which it covers.

F. A. Van Atta

Chemical Laboratories

Guide for Safety in the Chemical Laboratory, by the General Safety Committee of Manufacturing Chemists' Association, Inc. Published by the Van Nostrand Co., Inc., 250 Fourth Ave., New York 3. 1954. XIII + 234 pages. $4.25.

ACCORDING TO the foreword and introduction, this manual is designed primarily for students and instructors in college laboratories as the basis for teaching of safe practices in the chemical laboratory to students majoring in chemistry or chemical engineering. It was prepared for a committee of highly competent industrial safety and health specialists and plainly bears the stamp of their industrial orientation, except for this they left almost no mark on the volume.

The introduction is actually the last point at which an educational laboratory is mentioned, either directly or by inference. Illustrations and textual material are aimed very specifically at the industrial type of chemical laboratory or chemical engineering laboratory and pilot plant.

This is not necessarily a weakness in the book but it will certainly make it seem a trifle strange to the student of chemistry or chemical engineering who has had no industrial experience. In particular, however, it ignores almost completely the very great hazard of most educational and some industrial laboratories which is overcrowding and relatively poor supervision.

Probably the greatest weakness of the book is the fact that it attempts to cover such a large field in limited space, as is indicated by the table of contents which goes from laboratory design and equipment through all of the hazards of handling chemicals, including radioactive materials, and through the packaging and transportation of chemicals by all common carriers.

Because of this very wide ranging, discussion is necessarily rather superficial on each specific topic; in some cases it is so superficial as to be thoroughly uninformative to the student.

The discussion of clothing and personal protective equipment is superficial. It gives little indication of the reasons for the various types of personal protective equipment or of their proper use and it contains a number of inaccurate statements as to types of materials and equipment available. It ignores the existence of demand-type oxygen-breathing equipment and of hose masks with and without blowers.

One of the stated objectives of the manual is to lead the student to references to more detailed materials but the literature references listed are a detailed list of Manufacturing Chemists' Association publications, many of which have little or nothing to do with safety in the laboratory or anywhere else, and a highly abbreviated and not very informative listing of other general sources of information and a few books.

One could say for this that it is probably the best which has been published in this country for chemical laboratories and one sincerely hopes that there will be something better in the very near future.

F. A. Van Atta

Ventilating Systems

Flow and Fan-Principles of Moving Air Through Ducts, by C. Harold Berry. Published by the Industrial Press, 148 Lafayette Street, New York 13. 1954. V + 226 pages. $4.00.

FOR THE ENGINEER who has some responsibility for ventilating systems and would like to know what will make them tick, this little book should be a source of great satisfaction. It is designed to provide the engineering data necessary to make gas flow measurements and calculations for duct and hood systems and calculations of power and fan requirements. These data are presented in a simple and relatively logical order and with a minimum of mathematics. It can be handled very easily with no mathematics more advanced than algebra. The most difficult mathematical concept used in the whole book is a small amount of dimensional analysis which is certainly far from difficult.

This might not be quite satisfactory to the person interested in the theory of fan design or in the theory of flow in gases but as

a perfectly useful, practical text to assist in solving the problems which may come up in an actual ventilating system, it is highly satisfactory.

The text shows the result of a good deal of practice in teaching in that the relations among the various systems of units are spelled out in great detail and with the assistance of numerous numerical examples to illustrate the pitfalls which always await the unwary trying to thread his way through the maze of our English engineering units.

It can be highly recommended for anyone who needs to do ventilation calculations and wishes to have at least an elementary understanding of the theory underlying them and the possible combinations and permutations which may be seen.

F. A. Van Atta

Accident Statistics

Work Injuries in the United States During 1952. Published by U. S. Bureau of Labor Statistics, 1954, 41p. Bulletin No. 1164. 30c. For sale by the Superintendent of Documents, Washington 25, D. C.

Aeronautics

Standard on Aircraft Hangars. Published by National Fire Protection Association, 60 Batterymarch St., Boston 10. 1954, 52p. NFPA-No. 409. 50c.

Standard Operating Procedures Aircraft Rescue and Fire Fighting. Published by National Fire Protection Association, 60 Batterymarch St., Boston 10. 1954, 24p. NFPA-No. 402. 35c.

Static Electricity in Aircraft Operations and Maintenance. Published by National Fire Protection Association, 60 Batterymarch St., Boston 10. 1954, 12p. NFPA-No. 404. 15c.

Suggested Aircraft Rescue and Fire Fighting Equipment for Airports. Published by National Fire Protection Association, 60 Batterymarch St., Boston 10. 1954, 36p. NFPA-No. 403. 50c.

Fatigue

Symposium on Fatigue. Edited by W. F. Floyd and A. T. Welford. Published by H. K. Lewis & Co., Ltd., London, 1953, 196p. 24s. ($3.36)

Fire Protection

Fire Hazards and Safeguards for Metalworking Industries. Published

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CONRAD HILTON HOTEL

by National Board of Fire Underwriters, 85 John St., New York 38. 1954, 56p. Technical Survey No. 2. Free.

Food Industry

Work Injuries in the Fluid-Milk Industry 1952. Published by U. S. Bureau of Labor Statistics, Washington, D. C., 1954, 19p. BLS Report No. 62. Free.

Standards for Dehydrators and Driers for Agricultural Products. Published by National Fire Protection Association, 60 Batterymarch St., Boston 10. 1954, 24p. 35c.

Health

18th Annual Meeting—Conference 1953. Published by Industrial Hygiene Foundation of America, 4400 Fifth Ave., Pittsburgh 13, Pa., 1954, 183p. $3.00.

Pulmonary Fibrosis in Soft Coal Mines. By H. N. Doyle and T. H. Noehren. Published by U. S. Public Health Service, 1954, 57p. Public Health Bibliography Series No. 11. 35c. For sale by the Superintendent of Documents, Washington 25, D. C.

MAGAZINE ARTICLES

Accidents

Accidents and Productivity. By Dr. T. T. Paterson. British Journal of Industrial Safety, Summer, 1954, p. 25.

Wherever the Chips May Fall. By Gilbert F. Tyler. Supervision, August 1954, p. 10.

Cranes

Safe Crane Operation. By Lt. Col. Harry Kallberg. Pacific Factory, July 1954, p. 43.

Health

Dermatoses Among Food Handlers. By George E. Morris. Industrial Medicine and Surgery, August 1954, p. 343.

Newer Trends in Industrial Dermatology. By M. H. Samitz. Compensation Medicine, March-May 1954, p. 7.

Problems of Health in the Marketing of Chemicals. V. K. Rowe and E. M. Adams. AMA Archives of Industrial Hygiene and Occupational Medicine, July 1954, Section 1, p. 50.

Why Doesn't the Worker's Skin Clear Up? By George E. Morris. AMA Archives Industrial Hygiene and Occupational Medicine, July 1954, Section 1, p. 43.

—*To page 235*

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GREEN CROSS NEWS

Activities of Local Safety Councils and Chapters

By TOM A. BURKE

1954 Managers' Conference

The two-day Managers' Conference, scheduled for Friday and Saturday, October 15-16, preceding the National Safety Congress, will be of vital importance to all safety council managers and others interested in safety council operations.

To make the program of maximum value to all participants, a special planning committee was appointed by Walter D. Ladd, chairman of the Conference Committee on Procedures. This committee, comprising J. James Ashton, chairman; Dr. B. L. Corbett; Dan Hollingsworth; Joseph M. Kaplan; Estel Hack; and Robert B. Leopold, met in Chicago on August 12-13 and developed a challenging program, which will provide opportunity for full discussion on many of the basic problems confronting the National Safety Council and its chapters.

Special emphasis will be given on the opening day to the White House Conference and its implications for the National Safety Council and its chapters. A report will be given by Ned H. Dearborn on the current problems of the National Safety Council and plans under way to strengthen its over-all operations.

This year the Committee on Procedures of the Conference of Local Safety Organizations will meet on Thursday, October 14, preceding the Managers' Meeting. A number of matters of major consequence will be reported by the committee for discussion at the Managers' Meeting on Saturday.

Other sessions will include discussions on what industry wants from local organizations, what officials want from local organizations, and Services of the National Safety Council to Chapters.

On Friday, October 15, Special Achievement Awards will be presented at the managers' luncheon, and the Managers' Meeting will conclude with a social hour Saturday afternoon. The Conference of Local Safety Organizations will meet at 2 p.m. on Monday, October 18, followed by the conference banquet that evening.

It is urged that council managers make a special effort to have their presidents attend the Congress this year, and especially to participate in the meeting of the Conference of Local Safety Organizations on Monday.

Al Wood Accepts New Post

Albert H. Wood has resigned as managing director of the Santa Clara County Chapter, NSC, San Jose, Calif., to accept the position of manager of the Western Insurance Information Service, with headquarters in Los Angeles.

The Western Insurance Information Service is sponsored by a group of leading insurance companies in California and other Coast states. The position is mainly public relations work, a field in which Mr. Wood is well qualified through long and successful experience. He and Mrs. Wood have moved to the Los Angeles area where he took over his new duties in September.

Wood came West from Kansas City, Mo., two years ago, where he had been manager of the Commercial Department in charge of publicity, advertising and public relations for the Kansas City Public Service Company for 23 years. He is a former president of the Kansas City Safety Council, the Kiwanis Club and the Advertising Club of that city. While in the East he spent two years with Barron G. Collier, Inc., as copy-writer and salesman, and also four years as cadet engineer with the Public Service Corp. of New Jersey.

He made many friends during his management of the San Jose Chapter. While they regret to see him leave the city, they are pleased at the advancement that has come his way.

Kaye Moves to San Jose

Dave Kaye, for the past 6½ years managing director of the Spokane Area Safety Council, has resigned to accept the management of the Santa Clara County Chapter, NSC, at San Jose, Calif. He succeeds Albert H. Wood.

Mr. Kaye was the first manager of the Spokane Chapter upon its organization in 1948. He had spent two years as safety supervisor at the Trentwood Works, Kaiser Aluminum and Chemical Corp., and five years director of health and safety for Kaiser Shipyards at Richmond, Calif.

He has been a member of the advisory committee of the Washington State Safety Council and served as state safety chairman for the Washington Parent-Teachers Association. He is a member of the Public Education Committee of NSC and a past president of Spokane Chapter, ASSE.

During his energetic and successful administration in Spokane, that city won two first place awards in safety organization and three top honors in public information in the National Traffic Safety Contest.

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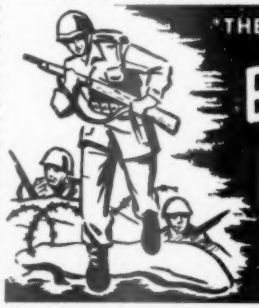

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CASES for COMMENT

Compiled by ROBERT D. GIDEL

Senior Engineer, Industrial Department, National Safety Council.

Quitting Time

The injured employee was a stock clerk whose duties consisted of receiving and storing of materials, filling orders, and shipping parts. On the day of the injury, between 3:58 p.m., and 4:00 p.m., the employee came out of the department office and started to run down the aisle to clock out. Approximately 50 feet from the office door, a one-inch gas pipe crossed over the aisle at a height of 8 feet 3 inches.

In running down the aisle, the employee leaped and grabbed the pipe to swing himself. Investigation showed two hand prints on the pipe, approximately one foot apart. Hand prints showed clearly due to accumulation of dust on the upper part of the pipe. It is surmised that his hands slipped or that he misjudged his swing. He hit the cement aisleway with the back of his head and shoulders, with his feet in the air. He fell with his feet in the direction that he had been traveling indicating that the momentum of his swing swung his feet off the ground and when he lost his grip he fell backwards on the cement aisle.

Three co-workers, who were standing in the aisle, waiting for a last whistle to blow, witnessed the accident and testified to substantially the same facts. He was taken to the hospital with a fractured skull.

Should this injury be charged since it was more or less self-imposed, involving horseplay.

DECISION: This injury should be included. Some of the judges commented that time spent in going to and from the exit from plant property is considered as time within the employment. They also brought out that in accordance with paragraph 2.4 of the ASA Code Z16-1945 an injury arising out of horseplay in the course of employment shall be considered an industrial injury and this case comes very close to falling in this category.

* * *

COMMENT: *Should supervisors be held responsible for control of employees within the plant at quitting time? It's a recognized fact that horseplay will take place at quitting time unless control measures are set up. When such injuries occur it has been helpful in some companies to play up to all employees the serious implications of such action. In fact, this type of injury and occurrence should be worked into any safety program, along with housekeeping, machine guarding, and the other old stand-bys.*

Line Crew

A five-man crew with a foreman in charge had gone to the pole yard to load poles. The pole trailer was parked parallel with the pole bunker and unhitched from the line truck. This division has what is commonly referred to as a "yard truck" which has a winch and hand line attached and is used to load poles. In most cases, this winch and line is operated by the injured employee. In getting the yard truck in position for use, the injured backed close enough to the pole trailer that it was impossible to open the truck door on the driver's side. The right door does not open from the inside of the cab.

About this time, members of the five-man crew started throwing snowballs at the injured. They were asked to stop by the foreman but ignored him. The injured became very angry when the men kept on throwing snowballs and attempted to get out of the cab, but the trailer was so close to the cab it allowed the door to open only a few inches. He then braced himself in the cab and kicked the door so hard that it pushed the pole trailer ahead and allowed the truck door to swing open far enough so the injured could dismount from the cab. The injured jumped from the running board of the cab up on to the frame of the trailer and then to the ground.

He reported immediately to his supervisor that he had hurt his knee. It was thought that the injured had sustained only a slight strain or bruise. He was told to go home for the balance of the day, stay off his feet, and apply heat and probably it would be all right the next day. On seeing the doctor the next day, x-rays

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IS THAT INJURY chargeable to your occupational injury record? In some cases there is reasonable doubt as to whether the injury arises out of or in the course of employment. This can usually be decided by consulting *ASA Standard Code Z16.1-1945*. If there is any doubt as to interpretation of the Code, the Committee of Judges of the American Standards Association's Sectional Committee is available to review the facts.

A few cases are discussed here. It is hoped they will aid readers not only in determining the chargeability of accidents but also in planning preventive measures.

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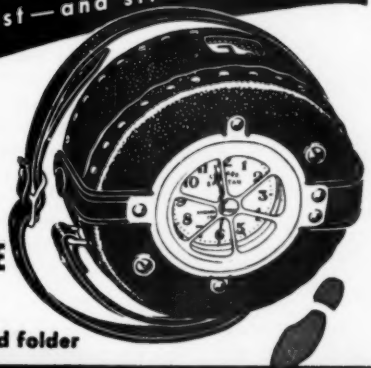

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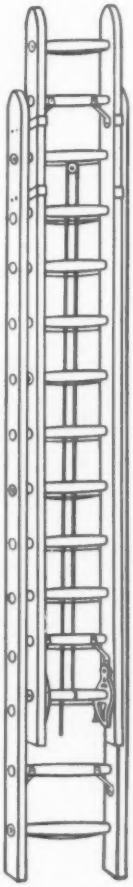
The accepted standard for ladders, Dayton's are built of selected, tested kiln dried Sitka Spruce, Douglas Fir, or West Coast Hemlock. Designed in accordance with the latest specifications of the "American Standards Association Safety Code," and to meet Underwriters Laboratories Standards for Ladders.

APPROVED AND LABELED BY UNDERWRITERS LABORATORIES

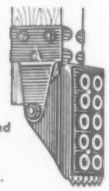
DAYTON Fig. 200 is a well constructed step ladder built for heavy industrial use to stand maximum abuse. Can be supplied with fully rodded back for extremely heavy duty jobs. Bucket rack optional. All hardware zinc plated. Sizes 4' to 16'.

DAYTON Type A is constructed of tested airplane spruce, reinforced with rigid steel supports for great strength, lightness of weight. Handrails of steel guard large roomy platform for added safety. These famous ladders can be set up instantly, are easy to carry and fold compactly for storing. Automatic locking feature insures safety while ladder is in use. Standard rubber safety shoes no extra cost. Sizes 3' to 12' to platform.

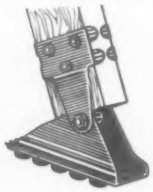
DAYTON Fig. 102, a strong ladder for general industrial use. 1-5/16" x 2¾" side rails (available 1⅜" x 3¼" side rails if desired—DAYTON Fig. 100). Three truss rods and four dowel braces per section for extra safety. Available with spring locks, rope and pulley if desired. All hardware is zinc plated. Sizes 16' to 40'.



DAYTON Type H, an extremely rugged type ladder, designed and built to meet the demand for a platform ladder with mill wright (rung) type back construction. Tool shelf on top. Ladder shoes standard equipment. Folds absolutely flat for easy storage. Features include pinch-proof type spreaders —corrosion resistant zinc hardware—slip proof treads. Sizes 4' to 16' to platform.



Rubber tread or spiked toe for double use.



DAYTON Safety Ladder Shoes . . . Special suction rubber tread (also in neoprene) really grips. Instantly converted for indoor or outdoor use. Base: 16-gauge steel. Side plates: 13-gauge steel. Renewable treads. Lock nuts, spring washers assure proper adjustment. Zinc plate finish.

Dayton safety ladder co.

2339 Gilbert Ave., Cincinnati, Ohio

In Canada—SAFETY SUPPLY CO., TORONTO

Green Cross News

—From page 152

Mrs. Kaye has just completed her first year as president of the Spokane YWCA. Their daughter is a sophomore at the University of Washington. Mr. and Mrs. Kaye moved to San Jose in September.

Big Outdoor Show

The Industrial Division of the Twin Cities Area Safety Council, St. Joseph, Mich., climaxed its interesting series of meetings with an outdoor "Water Rescue Show" witnessed by 3000 people. The purpose was to dramatize a phase of off-the-job and vacation safety, at the same time pulling the industrial members away from their usual hotel dining room discussions of plant problems.

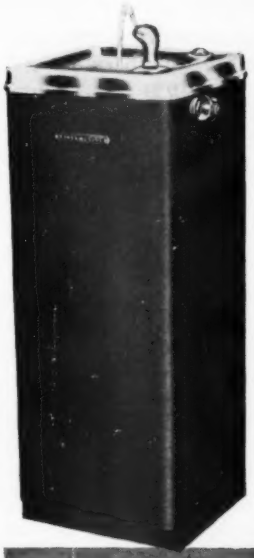
Cooperating organizations included: Red Cross, Coast Guard, Civil Air Patrol, Midwest Water Skiers Assocation, Yacht Clubs, Naval Reserve, Greer Marine Company, the Fire Departments and other city officials from Benton Harbor and St. Joseph. The Industrial Committee put all this talent in the hopper and came up with some water circus entertainment inter-mixed with practical demonstration of water rescue work.

The Petroleum section of the council arranged with the fire departments of the two cities and adjoining suburbs for a large outdoor fire-fighting demonstration. Manager Gerald Shipman of the Council says the program has resulted in increased attention to needed safeguards along the Twin Cities water front and also has stimulated more interest in all types of water safety.

Practical Research Approach

A new 12-week training program is announced by the Western Pennsylvania Safety Council, in cooperation with the Pittsburgh Psychological Centre of Carnegie Institute of Technology and the local ASSE Chapter. The course is planned to coordinate the psychological and the engineering approach to safety and is titled "A Practical Research Approach

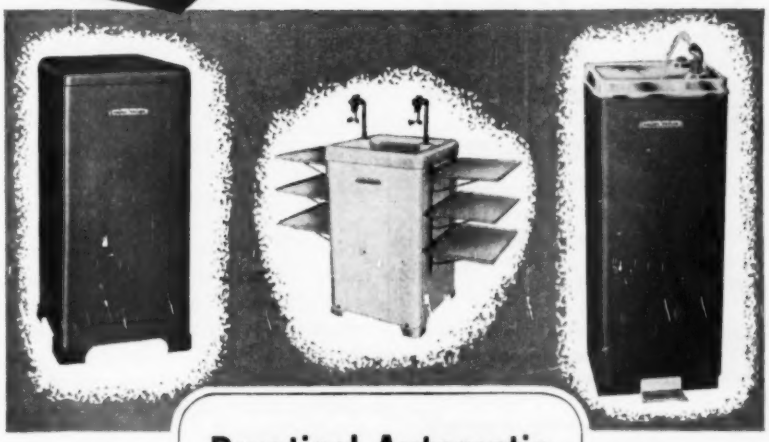
Halsey Taylor
COOLERS & FOUNTAINS

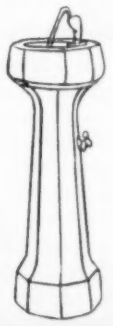


designed for
SAFETY

Halsey Taylor drinking-water equipment is always SAFE to use. Explosion-proof models, for operating conditions calling for such models. Water-cooled models for high temperature operation.

But whether it's a cooler or fountain, you can be sure of safety if it's a Halsey Taylor.





Practical Automatic Stream Control

means the drinking stream is kept at constant height, regardless of pressure variation. Fingers or lips cannot come in contact with or contaminate water supply. Yes, Halsey Taylors offer your best buy because of their operating safety, their hygienic safety and their over-all convenience and economy!

THE HALSEY W. TAYLOR CO., WARREN, OHIO

172 ELECTRIC UTILITIES USE CHARCO'S FLEX-SAF LINEMEN'S GLOVES

Why? Because they find them:

1 Safer . . . they are the result of extensive laboratory research, continuous control for uniformly high quality, careful processing, rigid inspection and testing exceeding ASTM requirements.

2 More comfortable . . . proven hand design, with curved fingers, greater flexibility, reducing hand fatigue.

3 Longer life . . . superior formulation, proven by field experience.

Your linemen, too, deserve the safest. Give them CHARCO FLEX-SAF RUBBER GLOVES.

Write today for complete catalog of safety products

CHARLESTON CHARCO RUBBER CO.

CHARLESTON RUBBER COMPANY
Stark Industrial Park
Charleston, South Carolina

Other products manufactured exclusively by CHARCO include:
CHARCO FLEX-FIT PROTECTIVE SLEEVES. CHARCO BULLDOG COMBINATION CLAMPS

to Accident Prevention." The series started September 13 on the campus of Carnegie Institute with classes scheduled for each Monday from 3 to 5 p.m.

Registration fee for the course is $100 per student for member of the Council or the ASSE, and $125 for non-members. Topics include human factor research; psychological problems in safety engineering; employee selection, employee training; principles and techniques of employee motivation toward safety; and the "Why and How of Safety Program Evaluation."

Small Plant Frequency High

In a recent analysis of the industrial accidents reported for the first half of 1954 in the Interplant Contest sponsored by the San Joaquin County Safety Council at Stockton, Calif., the small plants, in all except the 25 to 50 employee group, had frequency rates almost double those of the large concerns employing 500 or more workers. In this group, the frequency rate was 12.04.

In the 100 to 500 employee group, the rate was 19.52; 50 to 100 employees, 27.53; 25 to 50 employees, 14.67. In the less than 25 employee division the rate was 22.28. Seventy-five companies, with six months average employment of 15,490 workers participated. Thirty-four of these completed the half year with perfect, no-accident records. Peter Gretchen of the Frank M. Wilson Company, is the new chairman of the contest, which was launched about a year ago.

Lift Truck "Cowboys"

Early in the year, the Philadelphia Safety Council of the Chamber of Commerce held a training course for fork truck operators, figuring that there are "cowboys" in the plant—just as there are wild drivers on the highways. The courses attracted wide attention and the interest that resulted made it necessary to repeat the series several months later.

The course was held in a large indoor area allotted by the Naval Aviation Supply Depot to avoid possible interferences due to bad weather conditions . . . Manager Walter Mathews reports a complete reorganization of the Council's award plan. "Programs of this type need to be reviewed and shaken up once in a while in order to maintain a high level of interest," Mathews declared.

Powder-Actuated Tools

The Industrial Safety Committee of the Omaha Safety Council recently witnessed a novel safety demonstration of the safe use of powder-actuated tools, given by Jim Hildreth of the Remington Arms Company of Minneapolis. Using a .32 rim fire cartridge in the stud driver, he nailed wood to concrete and steel to steel, according to a recent issue of *Omaha Safety Council News*. Members of the Division were convinced that what might have been a hazardous operation turned out to be simple, safe and successful.

Anti-Noise Symposium

The Greater Los Angeles Chapter is serving as coordinator for the several technical associations that will sponsor the first "West Coast Noise Symposium" scheduled tentatively for early December in Los Angeles.

Controls Brightness of Fluorescent Lamps

DEVELOPMENT of a new, simplified, low-cost method for regulating the brightness of fluorescent lamps, thus increasing their flexibility, is announced by General Electric.

The dimmer, which will control the light output of up to 20 40-watt rapid-start fluorescent lamps at one time, supplements a more complex electronic control device introduced by G-E in 1952 for the control of larger numbers of lamps.

It operates on a new adaptation of an old principle in lighting, according to D. D. Kershaw of Nela Park who designed the circuit. The new system employs merely a simple electrical control device, of the type commonly available for dimming incandescent lamps or regulating the speed of motors, in combination with a special rapid-start ballast.

Why Skin-toughening
PREVENTS ATHLETE'S FOOT

SHOES CAUSE ATHLETE'S FOOT

The modern shoe is the main cause of athlete's foot, says the U. S. Public Health Service (Bulletin R-674). Shoes soften and devitalize the skin. This soft, dead skin inside a warm dark shoe is ideal soil for the growth of athlete's foot fungus.

FUNGUS SPORES ARE EVERYWHERE

The fungus spores, or seeds, are as common as dust. Some of them are on the skin almost all the time. And when the skin's resistance is low, they grow and multiply. The result is athlete's foot.

The chief danger of athlete's foot is that it causes cracks in the skin. More dangerous germs can then enter the blood stream. Serious secondary infections may result.

DISINFECTING THE FEET WON'T HELP

Attempts to disinfect bathers' feet are "futile, illogical, and potentially harmful," according to skin specialists.* You can't kill all the fungus spores, and you may weaken the skin still more by trying to kill them.

WHAT IS THE ANSWER?

Skin specialists say that the best chance of preventing athlete's foot is to build up the skin's resistance to fungus attack.* A strong healthy skin is your best defense against the ever-present fungus spores.

That is the basic principle of Onox skin-toughening.

*Archives of Dermatology & Syphilology, April, 1942.

WHAT IS ŌNOX?

ŌNOX is an odorless, non-poisonous solution of five beneficial mineral salts. Both laboratory† and controlled tests show that Onox toughens the skin and makes it resistant to fungus attack.

†Pease Laboratories, Inc., New York, N. Y.

IT'S EASY TO USE

Onox is used in a soft sponge rubber mat. One mat serves 50 bathers on a shift. Stepping on the sponge (after showering) forces Onox up between the toes, where it is needed. A good percentage of the salts stay on the skin, even after drying with a towel.

MEN LIKE TO USE THE MATS

The sponge mat is pleasant to step on. It is neat and attractive—no splash, no mess. And Onox is very refreshing to tired, aching feet.

FREE BULLETINS AND LEAFLETS

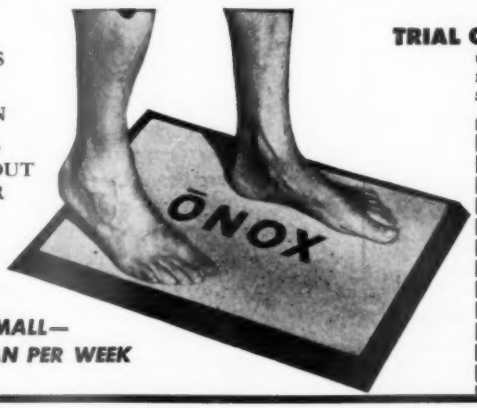
Free bulletins are sent you each month. These, along with easy-to-read leaflets, explain the need for skin-toughening. Customers report excellent results with this free service material.

Ōnox skin-toughening is used by over 70% of the largest manufacturers in the U.S.A.

ODORLESS

EASY TO MAINTAIN

NOTHING TO GET OUT OF ORDER



COST IS SMALL—
1¢ PER MAN PER WEEK

TRIAL OFFER... We will ship any amount of Onox and footmats for 60 days' use. If you and your men are not more than satisfied with results, you owe us nothing. For further information, write, or send coupon.

Ōnox, Inc., 123 Second St., San Francisco 5, Calif.
(Warehouses: Brooklyn, Cleveland, New Orleans, Los Angeles)

Send free catalog—no obligation—about Onox.

☐ We have showers. ☐ We plan to have showers.

Name.....Title.....

Company.....

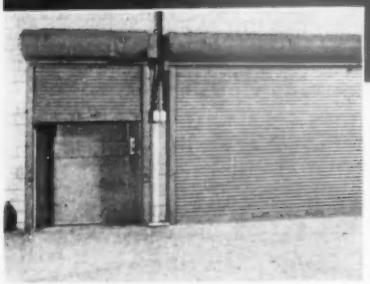
Address.....

City.....Zone...State.....

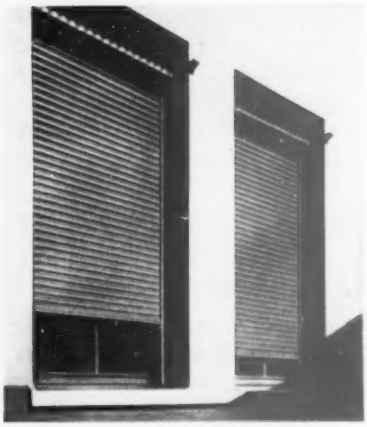
Get the safe, automatic protection of

AKBAR FIRE DOORS

Made only by the makers of
Kinnear Rolling Doors



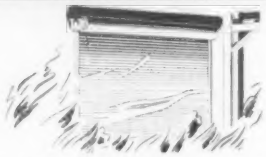
at DOORWAYS



WINDOWS

CORRIDORS

KINNEAR
ROLLING DOORS
Saving Ways in Doorways



They stop fire in its tracks

You can rest assured of *positive, automatic, safe* fire protection at windows, doorways or other openings equipped with famous AKBAR Rolling Fire Doors.

Approved and labeled by Underwriters' Laboratories, they combat fire loss by closing *automatically*, cutting off dangerous drafts, blocking the spread of flames, and confining fires to smaller areas.

When fire threatens, Akbar Doors are *pushed downward by a strong starting spring*, to assure quick, *positive* action.

Yet, downward speed of the doors is controlled by a special safety device, to protect anyone passing underneath as the doors close. Doors can also be opened *after* automatic closure, for emergency exits.

Another Kinnear safety feature prevents the steel curtain from pulling loose at top or dropping below the sill, if the floor is weakened by fire.

Akbar Fire Doors remain coiled above the opening, completely out of the way. In many cases, they're completely hidden from view. They can also be used in regular, daily service operation, and can be equipped for motor operation if desired. (Where maximum fire protection is not essential, non-labeled Kinnear Rolling Doors are preferred.)

The Kinnear AKBAR Fire Door is available in any size. Write for complete details.

The KINNEAR Mfg. Co.
1720-40 Fields Ave. . . . Columbus 16, Ohio
1742 Yosemite Ave. . San Francisco 24, Calif.
Offices and Agents in All Principal Cities

Bar Minors from Hazardous Machines

EFFECTIVE SEPTEMBER 11, boys and girls under 18 years of age are prohibited from operating 14 different types of power-driven paper products machines under a hazardous occupations order issued by Secretary of Labor James P. Mitchell.

A substantial proportion of some 5,000 or 6,000 minors under 18 who are working in plants producing converted paper products, work on these machines, according to Secretary Mitchell. Also, young people are known to be working at these machines in printing shops, book-binderies, stationers, and various other establishments.

Designated as *Hazardous Occupation Order No. 12*, the Secretary acted under authority of the Fair Labor Standards Act—the Federal Wage and Hour Law. This law sets a minimum age of 16 for most jobs and authorizes the Secretary of Labor to prohibit employment of 16 and 17 year old minors in occupations found particularly hazardous or detrimental to health.

Although injuries to workers on machines covered by the order are not too frequent, they are often severe when they occur.

Prohibited jobs include operating or assisting to operate any of the following machines: Arm-type wire stitcher or stapler, circular or band saw, corner cutter or mitering machine, corrugating and single- or double-facing machine, envelope die cutting press, guillotine paper cutter or shear, horizontal bar scorer, laminating or combining machine, sheeting machine, scrap-paper baler, or vertical slotter.

Also included are operating or assisting to operate a platen die-cutting press, platen printing press, or punch press which involves hand feeding. The prohibition does not apply to apprentices, or to students in cooperative vocational training programs under strict conditions specified in the order.

A public hearing was held last May and no objections to the proposal were received.

three new FIRST AID SAFETYGRAPHS

1 **THE TRANSPORTATION OF INJURED PERSONS**

2 **FIRST AID TREATMENT FOR BURNS**

3 **HOW TO CONTROL BLEEDING**

Prepared in collaboration with the Council on Industrial Health of the American Medical Association.

Preview them at the Council display during the National Safety Congress—Lower Lobby, Conrad Hilton Hotel.

NATIONAL SAFETY COUNCIL

Now!

Safety SOLES

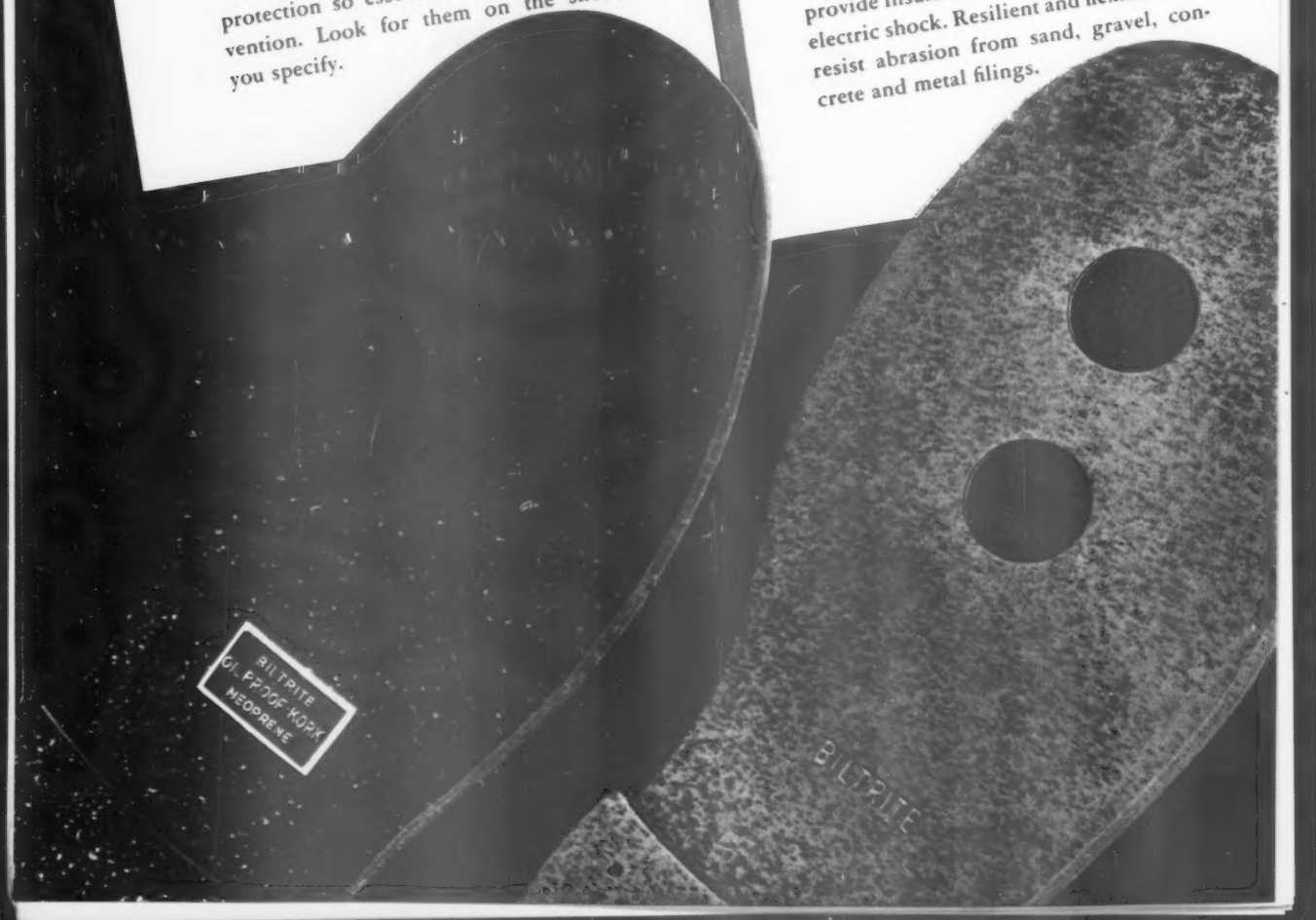
WITH THE *SURESTEP*

NEOPRENE-CORK Safety Soles

Biltrite SURESTEP Neoprene-Cork Safety Soles have maximum resistance to oil, grease, chemicals and acids—plus the lightness and flexibility for long-wearing comfort. The twin green safety plugs, also of oilproof Neoprene, add to the non-slip protection so essential to accident prevention. Look for them on the shoes you specify.

FLOATING CORK Safety Soles

Rugged and massive in appearance, Biltrite SURESTEP Cork Safety Soles are not cellular—yet are so light they actually float on water. Exceptionally tough and long wearing, they are waterproof and provide insulation against heat, cold, and electric shock. Resilient and flexible, they resist abrasion from sand, gravel, concrete and metal filings.

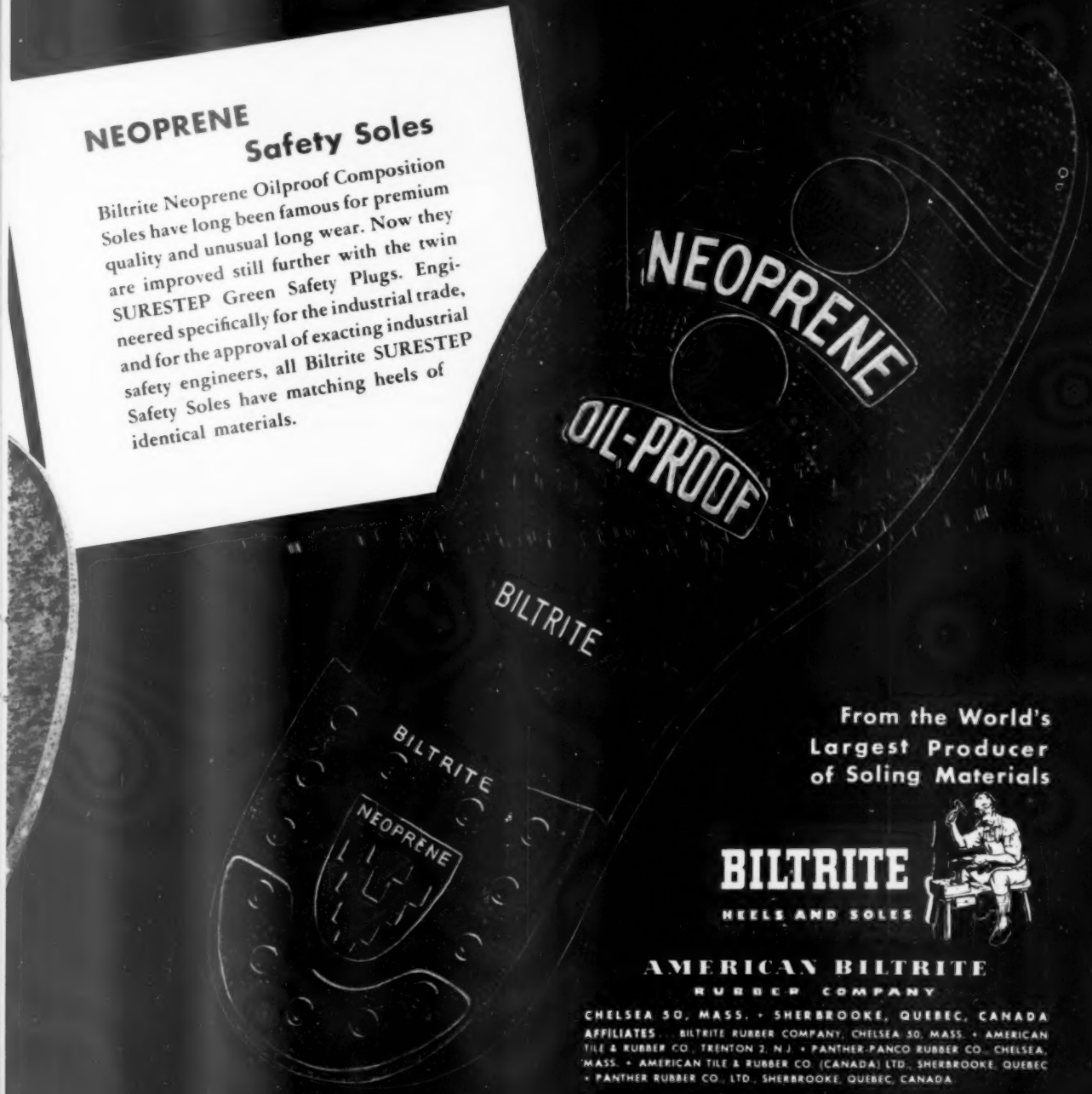


Safety SHOES

GREEN SAFETY PLUGS

NEOPRENE Safety Soles

Biltrite Neoprene Oilproof Composition Soles have long been famous for premium quality and unusual long wear. Now they are improved still further with the twin SURESTEP Green Safety Plugs. Engineered specifically for the industrial trade, and for the approval of exacting industrial safety engineers, all Biltrite SURESTEP Safety Soles have matching heels of identical materials.



From the World's Largest Producer of Soling Materials

BILTRITE
HEELS AND SOLES

AMERICAN BILTRITE
RUBBER COMPANY

CHELSEA 50, MASS. • SHERBROOKE, QUEBEC, CANADA

AFFILIATES . . . BILTRITE RUBBER COMPANY, CHELSEA 50, MASS. • AMERICAN TILE & RUBBER CO., TRENTON 2, N.J. • PANTHER-PANCO RUBBER CO., CHELSEA, MASS. • AMERICAN TILE & RUBBER CO. (CANADA) LTD., SHERBROOKE, QUEBEC • PANTHER RUBBER CO., LTD., SHERBROOKE, QUEBEC, CANADA

here's what safety men say about

National Safety Calendars

"Of all the various things gotten out to impress upon the employees and the public in general, the necessity of being careful of their own and others safety, the calendar is the best medicine."

"We believe that a part of the credit for our decreased number of accidents properly belongs to your calendars."

"You can't live with one of these splendid pictorial messages for a whole month and be indifferent to the value of things the safety movement stands for."

"Our employees look forward to receiving them and they are an important item in our Safety Campaign."

"They are good—they make people think."

"It has done a great deal more than anything else to cement the promotional idea of the Safety movement in the plants with the general public Safety movement."

"They are an excellent investment and were greatly appreciated by our men."

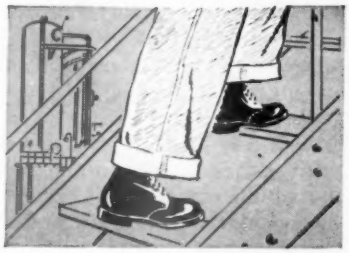
NATIONAL SAFETY COUNCIL

ORDER YOURS—TODAY

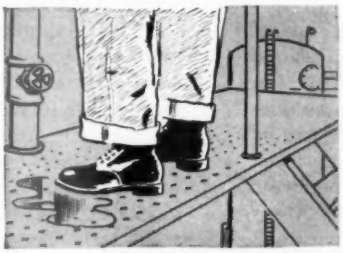
NEOPRENE SOLES & HEELS

add comfort and extra long wear to RICO Chemical Safety Shoes

Courtesy:
Record Industrial Co.,
Philadelphia, Penna.



Flexible and comfortable



Acid-resistant and durable

Corrosive chemicals have no appetite for these new Rico Safety Shoes. Designed expressly for the chemical industry, they have specially treated uppers—completely stitched with "Dacron"*—for protection against accidental splashes. And even the strongest acid has little effect on their neoprene soles and heels.

There's comfort in every step with resilient neoprene underfoot. And the way these durable soles can take abuse means extra long service life for *any* shoe. They withstand oil, solvents and chemicals . . . won't crack or soften despite severe scuffing and exposure to heat. The neat, trim profile of neoprene soles is there to stay—important to the shoe's appearance on the job. With such an array of advantages, it's easy to see why designers specify soles of Du Pont neoprene for top-quality safety and work shoes.

**Du Pont's registered trade-mark for its polyester fiber.*

SEND FOR FREE BOOKLET

E. I. du Pont de Nemours & Co. (Inc.)
Rubber Chemicals Division NS-10, Wilmington 98, Del.

Please send me your booklet on neoprene soles which contains information about neoprene's properties . . . actual case histories that prove neoprene's long-wearing qualities.

*Name*_____ *Position*_____

*Firm*_____

*Address*_____

*City*_____ *State*_____

DU PONT NEOPRENE

The rubber made by Du Pont since 1932

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

The Land Divided

(From page 107)

and a fast buck, labor camp riots and mass fights were not uncommon.

Construction Accidents

Total Isthmian Canal Commission construction forces (excluding contractors), ranged from 3,146 employees the first year to a peak of 56,654 in 1913, or an average force of 33,000. From the Health Department Annual Reports, Table I indicates the number of deaths of employees from all causes, during the construction period.

These figures reveal that the accident fatality rate was 3.7 per 1,000 employees. About 10 per cent of the employees killed in work accidents were United States citizens. Railroad accidents, drowning and dynamite explosions were the principal causes. traumatism, drowning and dynamite explosions were the principal causes.

Detailed accident statistics were not prepared locally, but reports on all reported injury cases, subsequent to August 1, 1908, were submitted to the Department of Labor and included in their consolidated statistical reports.

An interesting excerpt from their report covering all departments of the United States Government for the period between August 1, 1908, and June 30, 1911, follows:

> Under each (accident) cause the separation of the Isthmian Canal Commission and all other branches of service has been preserved, and the observation made above, that the accidents of shorter duration predominate in the Isthmian Canal Commission as compared with other branches of service, evidently holds true of each individual cause, so that it can not be explained by differences in causation.
>
> The reasons for this difference have been given above—better medical treatment in Government hospitals, better reporting of minor accidents, compensation for disability lasting 15 days or less, and also better medical supervision, which prevents undue extension of the disability period.

The Department of Labor overlooked another possible explanation as indicated by an excerpt from just one of the Division Engineer's 1913 annual report:

> During the past year 3,701,250 pounds of explosives were used and no men were killed while handling dynamite. Owing to the great care taken to prevent accidents but eight men in all have been killed by dynamite in the central division during the last four fiscal years, although during that period nearly 23,000,000 pounds of explosive were used.

So it would appear that although there was no formally organized accident prevention program, we must give the Canal builders credit for establishing at least a better accident severity rate than other branches of the Federal service.

Operation of Canal

Although 50 years have elapsed since construction of the Panama Canal was undertaken by the United States, many of the elemental problems of that period are inherent in today's operation and maintenance of the waterway.

TABLE I

Deaths from all causes, Panama Canal Construction Period

	No. of Employees			Deaths	
Year	U. S.	Other	Total	Total	Accident
1904	471	2,675	3,146	82	27
1905	3,005	16,450	19,455	427	15
1906	5,106	21,441	26,547	1,105	54
1907	10,604	28,634	39,238	1,131	164
1908	12,383	31,507	43,890	571	181
1909	11,662	35,505	47,167	502	142
1910	13,021	37,781	50,802	558	162
1911	12,251	36,625	48,876	539	155
1912	12,553	38,340	50,893	467	131
1913	11,943	44,711	56,654	473	162
1914	7,024	37,305	44,329	130	26
				5,985	1,219

The Canal Zone is still an isolated community, 2,000 miles away from a ready storehouse of supplies. Sanitation and healthful living conditions are still prime requisites for employees and their families. Technical skills are as vital to operation and maintenance of the Canal as they were to its building.

The day-to-day operation of the Panama Canal is far more commonplace and unlikely to attract world attention than its construction—so long as it is efficiently done. Although all parts of the operation are merged into the primary mission of expediting the movement of ships between the Atlantic and Pacific oceans, which includes operation and maintenance of the locks, waterway and navigational aids; the smaller and less publicized activities are equally essential for its accomplishment.

The principal functions of the Canal enterprise today include civil government; public health; supplies and personal services for employees and their families; servicing of vessels using Canal waters; correlation of its diverse activities with those of the Armed Forces and other U. S. Government agencies on the Isthmus; and the fulfillment of many international commitments of the Federal Government.

Supporting facilities for these functions necessarily have a wide range. In civil government they include police and fire protection; schools; hospitals, clinics, and public health services; postal system; customs, quarantine and immigration services; and courts, jails and a penitentiary.

Municipal facilities normal to any modern community are provided and include construction and maintenance of streets and public highways, sewer and water systems; installation, operation and maintenance of power plants, substations, transmission and distribution lines, lighting, power and communication facilities.

Many other subsidiary operations include construction and maintenance of housing, buildings and structures; operation of com-

—To page 168

Before using ZORBALL, Academy Plating had to scrape tallow, grease and abrasive from their polishing-room floor. Even steam cleaning failed to budge deposits.

After using ZORBALL, Academy Plating once again has *clean, safe* floors. No scraping is required. All that's needed is to spread and sweep up ZORBALL daily.

ZORBALL ends floor scraping at Academy Plating Co.

"PREVIOUS to the use of ZORBALL on our polishing-room floor, we used scrapers to remove the buffing compounds consisting of tallow, grease and abrasive which had accumulated," reports Herbert Mancini, superintendent, Academy Plating Company, Newark, N.J.

"We also tried a steam-cleaning machine using an alkaline detergent, but it failed to remove these deposits. However, three weeks after applying ZORBALL, the unsightly and dangerous condition was cleaned up by the traction of the polishing operators' shoes on the floor. No labor was required except the daily spreading and removal of the ZORBALL!"

Removing compound deposits is just one of the big benefits you get from ZORBALL — the safest, lowest use-cost floor absorbent known. It absorbs oil, water, paint, chemicals, yet remains skidproof and nonflammable — even after hard use, or when saturated. Dried out, ZORBALL can be re-used without mudding, caking or dusting. Ask your Wyandotte representative or jobber for a sample or demonstration, today! *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Also Los Nietos, California.*

Wyandotte CHEMICALS

Helpful service representatives in 138 cities in the United States and Canada

Largest manufacturers of specialized cleaning products for business and industry

The Land Divided

(From page 166)

missary stores for food, clothing, household goods, gasoline and other supplies; storehouses for all industrial and ship supplies; marine bunkering, stevedoring, ship repair, port and harbor terminal facilities; official motor transportation equipment and garages; railroad; and service centers for recreation, sale of sundries, theaters, restaurants and hotel.

The Canal organization has undergone major changes in recent years as a result of force reduction to peacetime requirements, reorganization in July 1950 and incorporation of Canal operations in July 1951.

By Executive Order the previous organization (The Panama Canal and Panama Railroad Company) was succeeded by a new organization as follows: The Panama Railroad Company was renamed the Panama Canal Company and all activities other than of a strictly governmental nature were transferred to the new company from the Panama Canal. The governmental functions previously performed by the Panama Canal were transferred to a new agency designated as the Canal Zone Government.

The company and the Canal Zone Government are closely interrelated in purposes, organization and operations, and the function of the two agencies in combination is the administration of the Panama Canal enterprise as a whole.

The Governor of the Canal Zone who is charged with the administration of the Canal Zone Government, under the supervision of the Secretary of the Army, is ex-officio a director and president of the Panama Canal Company.

Safety Gets Attention

Periodically over the years, suggestions were made that an organized safety program be established; however, all officials were not in agreement as to the need for such a program. Neither was there agreement on the type of program considered appropriate for the organization. A few units were conducting their own individual safety programs on a rather limited scale.

Very effective work had been done on guarding machinery and numerous rules and regulations had been promulgated; but their enforcement was lax and apparently the necessity of educating the individual worker and interesting him in preventing accidents had not been emphasized.

During the 25 years of operation and maintenance, 1915 thru 1939, when the organization consisted of an average of 15,731 employees, we were experiencing 73.5 lost time injuries for every 1,000 employees and a fatality rate of .85 per thousand, or one fatality for every 1,174 employees per year.

In 1939 a statistical study of the previous 10-year period revealed a definite adverse trend in the accident rate and the fact that during the prior year 10 per cent of all employees sustained injuries causing them to lose time in excess of three days.

After further study, on April 26, 1940, our present safety program was born, when the Governor "established a Safety Section, in charge of a Safety Engineer, to supervise and promote the application of safety measures in all subdivisions of The Panama Canal and Panama Railroad organization, and to develop and improve the programs of accident prevention."

To further emphasize the need for an organized accident prevention program, the accident frequency rates for the various operations ranged from 32 to 216, or an average of 110 for the entire organization, during the first quarter of the safety program's existence. At this time the working force consisted of 27,548, of which 21,817 were native workers and 5,731 were United States citizens.

Preliminary studies and review revealed that the most immediate and pressing problem was one of "attitude." It was disclosed that "higher officials knew little or nothing about the accident experience in their departments. Some were patently not interested. A few felt that safety was just another 'wet hen'—why not let things ride as they are?"

Some department heads feared interference with their method of operations and did not welcome outside directions or advice.

Lower down the supervisory scale it was "Don't waste my time with this safety business. I've got a job to do, and besides, if anything happens to one of these natives, we just go out in the bush and get another. In fact, the next one may be a little better than this one."

It can very readily be seen from this prologue that the work of the new Safety Section was really laid out for it. Another obstacle aside from the heterogeneous nationalities involved, together with their varied backgrounds and cul-

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TABLE II

Accident Experience, Panama Canal Operations, 1940-53

Calendar Year	Man Hours	Disabling Injuries	(Fatalities)	Frequency Rate	Severity Rate
1940 (6 mos.)	33,311,000	2,991	9	90	2.84
1941	83,872,000	5,370	25	64	2.87
1942	96,107,000	4,203	29	44	2.59
1943	89,483,000	3,277	21	37	2.09
1944	72,642,000	2,541	10	35	1.60
1945	68,048,000	1,895	9	28	1.39
1946	54,415,000	1,204	5	22	1.59
1947	48,242,000	1,129	5	23	1.44
1948	42,996,000	911	3	21	1.19
1949	38,541,000	656	3	17	1.20
1950	35,754,000	638	1	18	.71
1951	36,116,000	550	1	15	1.06
1952	34,434,000	439	5	13	1.32
1953	31,367,000	357	1	11	.79

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You just grab a Kidde CO_2 or Dry Chemical portable, aim the horn, and pull the trigger. Whoof! The fire's smothered right in its tracks!

And don't forget big hazards like spray booths, dip tanks, electrical equipment and flammable liquids. See that they get the built-in protection of a Kidde *Fully Automatic* CO_2 Fire Extinguishing *System.*

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Platform support trusses lock to upright ladder sections with *both* automatic and manual safety locks . . . cannot be rocked or sprung loose. Locking casters lock both the wheel and the swivel for added safety.

The absence of "X" bracing permits the use of *Baker Scaffolds* in occupied areas . . . they span machinery, equipment and stockpiles.

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Company_____

Address_____

City_____ State_____

COMING EVENTS

In the Field of Safety

Oct. 5-7, Louisville, Ky.
Greater Louisville Safety Conference and Exhibit (Kentucky Hotel). Estel Hack, executive vice president, Speed Bldg., Louisville 2, Ky.

Oct. 18-22, Chicago
42nd National Safety Congress and Exposition (Conrad Hilton Hotel). R. L Forney, general secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11.

Nov. 10, Ft. Worth, Tex.
Tenth Annual Industrial Institute, sponsored by Fort Worth Safety Council and Fort Worth Chapter, American Society of Safety Engineers. (Hotel Texas). L. W. Graff, safety director, Fort Worth Safety Council, Majestic Bldg., Fort Worth, Tex.

Nov. 18-19, Portland, Ore.
Sixth Annual Governor's Industrial Safety Conference (Masonic Temple). Leonard A. Weston, director, Accident Prevention Division, State Industrial Accident Commission, Public Service Building, Salem, Oregon.

Nov. 18-19, Spartanburg, S. C.
Seventeenth Annual South Carolina Statewide Accident Prevention Conference (Spartanburg Memorial Auditorium and Wofford College). J. D. Watson, Jr., safety engineer, South Carolina Industrial Commission, Columbia, S. C.

December 6-7, Baton Rouge, La.
Annual Louisiana Safety Conference (Hotel Heidelberg). Contact Col. Charles E. Doerler, Secretary, P.O. Box 1148, Shreveport, La.

Feb. 27-28, Mar. 1, New Orleans
Southern Safety Conference and Exposition (Jung Hotel). W. L. Groth, executive director, P.O. Box 8927, Richmond 25, Va.

Mar. 8-9, Philadelphia
Twenty-first Annual Philadelphia Regional Safety and Fire Conference and Exhibit. (Broadwood Hotel). Walter W. Matthews, managing director, Philadelphia Safety Council, 17th and Sansom Streets, Philadelphia 3, Pa.

Mar. 21-23, Los Angeles
Second Annual Southern California Safety Congress and Exhibit. (Ambassador Hotel). Joseph M. Kaplan, secretary-manager, Greater Los Angeles Chapter, NSC, 610 South Main St., Los Angeles 14.

March 29-31, Pittsburgh, Pa.
Thirtieth Annual Western Pennsylvania Safety Engineering Conference and Exhibit (Hotel William Penn). Harry H. Brainerd, executive manager, 605 Park Bldg., Pittsburgh 22, Pa.

Mar. 30-31, Indianapolis
Eighth Central Indiana Safety Conference and Exhibit (Claypool Hotel). Jack E. Gunnell, Indianapolis Safety Council, 320 N. Meridian St., Indianapolis 11, Ind.

Apr. 20-22, Grand Rapids, Mich.
Twenty-fourth Annual Michigan Safety Conference. (Pantlind Hotel and Civic Auditorium). R. H. Goring, executive secretary, c/o Michigan Bell Telephone Company, Detroit, Mich.

May 19-21, Richmond, Va.
Virginia Safety Association, Annual Meeting. (Jefferson Hotel). William M. Myers, executive secretary, Virginia Safety Association, Room 302, 1103 E. Main St, Richmond, Va.

Noise to be Discussed At AIEE Meeting

THE PROBLEM of industrial noise, ways to measure it and techniques for reducing it, will be considered during a session of the five-day Fall General Meeting of the American Institute of Electrical Engineers at the Morrison Hotel, Chicago, October 11-15.

Four papers on noise are to be presented Tuesday, October 12:

Present-Day Techniques of Noise Measurement, by B. G. Watters, Bolt, Beranek and Newman, Inc.

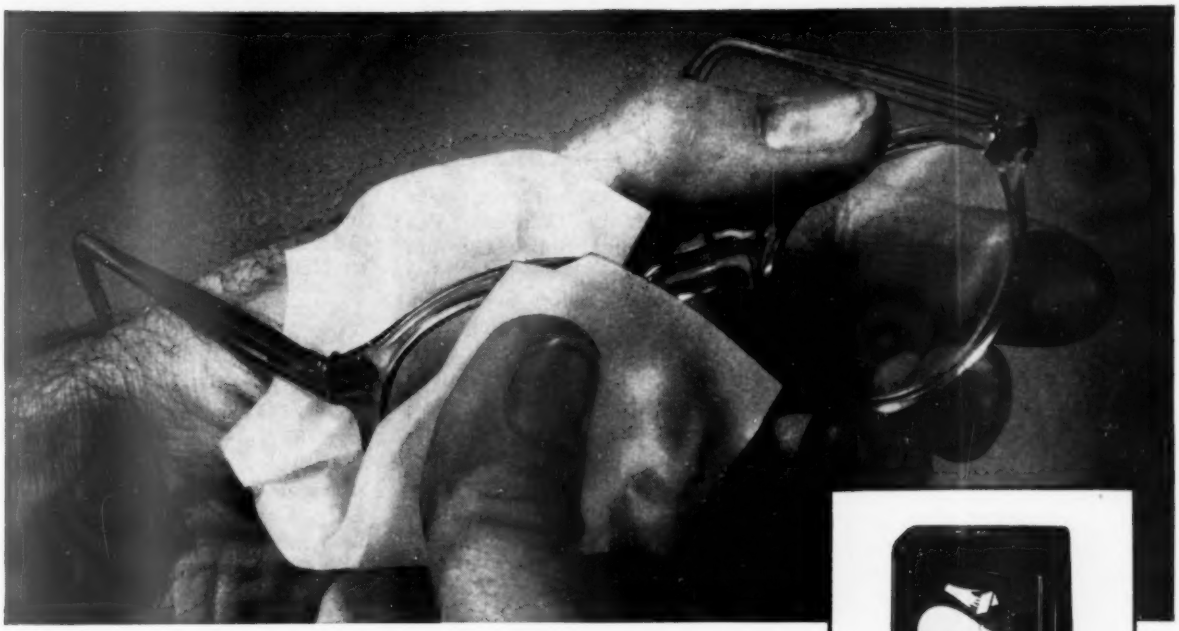
Techniques for Estimating Sound Levels in Industrial Areas, by R. O. Fehr, General Electric Company.

The Noise Levels of Some Typical Polyphase Induction Motors, by R. L. Wall, General Electric Company.

Techniques of Reducing Noise in Machinery, with Particular Application to Electric Motors, by B. J. Schweitzer and H. C. Hardy, Armour Research Foundation, Illinois Institute of Technology.

About the time you learn to make the most of life, the most of it is gone.

keep safety glasses **safe**



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- **Mounted at a height of 8 to 10 feet, Klear-Vu Safety Mirrors clearly reflect the movement of oncoming floor traffic from opposite direction—thereby removing principal cause for collisions.**
- **Mirrors are easily installed and adjustable for any desired angle. They are also adaptable for outdoor use.**

Style	No.	Dimensions
Circular Convex Glass	120	12" Dia.
Circular Convex Glass	180	18" Dia.
Circular Convex Glass	240	24" Dia.
Flat Glass Rectangular	918	9" x 18"
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PERSONALS

E. C. BEUTHIN, formerly works manager of the Oakmont, Pa., plant of United States Gypsum Company, has been appointed manager of the Safety Section—a new position—and the Safety Section has been transferred from the Personnel to the Operations Department.

Beuthin has been with U.S.G. since 1936 and has been connected with the Oakmont plant for the past several years. He was made plant superintendent in 1947, and in 1949 was appointed works manager. He will move to Chicago to assume his new duties.

MAX M. FISCHER, formerly superintendent of the paper mill at Gypsum, Ohio, has been named to replace Beuthin as Works Manager of the Oakmont plant.

AVAILABLE

Safety Director, 10 years experience in all phases of accident prevention including plant and fire protection, security, self insurance program and related personnel welfare functions. Excellent rate reduction record in chemical manufacturing, construction and atomic research. Graduate civil and industrial engineer, member ASSE. Will relocate. Age 40. Interested in permanent connection. Address Box 444, NATIONAL SAFETY NEWS.

SAFETY ENGINEER

Safety Engineer — minimum industrial experience, one year. College degree (engineering training preferable). Under age 30. No physical defects. Draft exempt. Large Connecticut plant has need for a man to coordinate the entire safety program. Applicants should be thoroughly versed in safety procedures. Reply, giving all pertinent data, salary desired, availability date, education, experience. All replies will be kept confidential. Address Box 445, NATIONAL SAFETY NEWS.

THE READERS' POINT OF VIEW

Comments on topics of current interest are invited. They need not agree with the editors' opinions.

Eye Hazards in Church

YORK, PA.—Dog-gone, I'm peeved—all because of $35 I have invested in a pair of glasses I swear I'll never wear again.

I've been wearing safety prescription glasses for years in slick bakelite frames which I thought gave me a dignified appearance.

Some months ago the wife and daughters got the idea I looked like a hoot owl. Why couldn't I get a different pair for church and social affairs?

So I do—to the tune of $35. In the mirror the old man did look younger and not so hoot owlish. About three days after I have these new glasses I go to church with the wife and daughters. We have a red hot preacher and I'm leaning forward to hear everything because in the pew ahead is a family with a cute but noisy and squirming little girl. She ups and smacks me with a hymnbook right across my nose and glasses.

No, the glasses didn't break, but between that little girl and the preacher I got a little more of the devil scared out of me. From now on, every waking moment, on or off the job, I'm wearing safety glasses—even if I do look hoot owlish. I've told the women that's final for the balance of my book of life.

C. N. FOOSE
Mill Superintendent
National Gypsum Co.

NEW SAFETY

HANDLE CORROSIVES

NEW EASE

NEW ECONOMY

COMPANIES IN ALMOST EVERY MAJOR INDUSTRY are using one-piece, light weight Plaxpak® carboys. Age-old breakage problems have been eliminated. Employees move and use hazardous chemicals with new ease and efficiency. Carboy replacement costs are practically zero.

DESIGNED FOR SMOOTH POURING. Plaxpak carboys are available in 6½ and 13-gallon capacities, either naked or enclosed in a plywood jacket. Made of inert polyethylene, they are resistant to acids and alkalies. They can be frozen without damage.

YOU CAN ELIMINATE BREAKAGE PROBLEMS in your plant—improve your handling, use and storage of hazardous or expensive chemicals—increase your protection of people and equipment—by adopting Plaxpak carboys. Write for our brochure—and get all the money-saving facts about this modern way to handle bulk liquids.

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Designed for
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can take it!

Tough — wears like iron, takes endless snagging, scraping, chafing and still gives full protection.
Rotproof — not affected by oils or chemicals — will not blister, crack or peel.

Waterproof — made with top quality base fabric, first saturation-coated, then coated on the inside as well as on the outside with specially blended Neoprene Latex.

Many styles — in black, yellow or Hunter's green
Write for catalog

THE H. M. SAWYER & SON CO.
Cambridge, Mass.

Light's Diamond Jubilee

—From page 115

introduction of the gas-filled bulb in 1913. Other refinements were added and mass production methods made more efficient lamps available at lower cost. Some 10,000 types of filament lamps are now on the market.

With gas distribution for his pattern, Edison evolved a similar plan for electrical service. Key elements of the system were:

1. An economical generator to manufacture constant current.
2. A system of conductors or mains which could be tapped at house fronts to "pipe" current into homes.
3. A method for maintaining constant pressure (voltage) throughout the entire system, regardless of the number of lamps in use at one time.
4. A lamp which could be manufactured in quantity and would give light equivalent to that of a gas jet at a competitive price.
5. A method of feeding current to a multiple circuit, permitting individual operation of any number of bulbs.
6. A method for protecting the system against current overloads and short circuits (fuses) and the design of fixtures, sockets, switches, etc., suitable for household use.
7. A meter to measure and record the amount of current supplied to each customer.

All of these are taken for granted today. The advances of

DATES IN ELECTRICAL PROGRESS

1800. Volta develops first battery
1808. Davy produces first electric arc
1809. Henry constructs first electromagnetic motor
1831. Faraday develops disk dynamo and first transformer
1835. Clarke exhibits generator
1836. Morse invents telegraph instrument
1837. Davenport develops first commercially successful electric motor
1842. Henry conducts wireless experiments demonstrating induction effect
1844. First commercial telegraph line in U. S. opened between Washington and Baltimore
1857. First locomotive using electric power makes trial run between Washington and Baltimore
1859. Plante designs storage battery
1862. First commercial application of arc light in England
1873. Gramm introduces first lighting generator
1875. Elihu Thompson operates first radio set
1875. Bell invents telephone
1876. Berliner invents microphone
1877. Copper wire invented and cable development begins
1877. Weston gives first public exhibition of street lighting in U. S.
1879. Edison develops dynamo for his incandescent lighting system
1879. Edison invents his incandescent lamp
1881. First theater lighting plant begins operation in Boston
1881. Dr. Morton uses electric current in medical treatment
1882. First central station opened at Pearl Street, New York
1882. First central station using water power placed in service at Appleton, Wis.
1883. First night baseball under arc lights.
1883. "Edison effect" is discovered, the basis of electronics
1883. First photograph by incandescent light
1884 Nipkov invents scanning disk for television
1886. Electric power introduced in homes in form of motors for sewing machines
1886. William Stanley demonstrates practicability of alternating current distribution; Westinghouse builds first commercially successful a-c generating station at Buffalo
1887. Hertz establishes electromagnetic nature of light
1888. Tesla works out theory of induction motor
1891. Edison invents motion picture camera and projector
1893. De Laval builds first high-speed steam turbine in U. S.
1895. Roentgen discovers x-ray
1896. Dr. Finsen introduces violet-ray therapy
1896. First electric flatirons manufactured
1896. Acheson receives patent for electric furnace
1896. Edison files patent for first fluorescent lamp
1897. First electric automobile
1897. Marconi receives American patent for wireless telegraphy
1899. First installation of steam turbogenerators at Wilmerding, Pa.
1904. Korn pioneers in electrical transmission of pictures by wire and wireless
1907. De Forest granted patent for vacuum tube
1910. First practical electric range
1910. First electric washing machine
1911. Drawn tungsten filament lamp introduced in U. S.
1913. First electric refrigerator
1915. Claude given patent for neon tube
1916. Electric clocks developed
1920. Station KDKA is first radio station to broadcast regularly scheduled programs
1923. Jenkins transmits pictures by radio from Washington to Philadelphia
1924. Zworykin develops system of television
1925. First air-conditioned theaters
1927. Motion pictures with synchronized action and sound announced
1928. Station WGY pioneers as TV station with regular schedule
1929. Coaxial cable is developed

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The science of fire-engineering has come a long way since the era of the horse-drawn fire engine. Now you can protect your flammable liquid fire hazards by calling in National Foam engineers, who survey your plant and plan a modern fire-engineered system for your particular needs. They check locations, processes, flash points, existing system, water supply, and other factors. They recommend a basic AER-O-FOAM System with manual or automatic control, stationary or mobile operation, and all the proper equipment . . . foam chambers, overhead units, dip-tank systems, nozzles, extinguishers. After installation, National Foam furnishes a complete operating manual.

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Leading industrial doctors advise immediate washing with plenty of running water as the best first aid treatment for any chemical in the eyes. Records prove that washing with water for ten minutes or more, close to the accident, is necessary to reduce or eliminate eye damage.

Forehead operation leaves hands free to open eyelids so water can be directed wherever chemicals might be lodged. Sanitary white baked enamel bowl is resistant to most fumes.

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Quick Action
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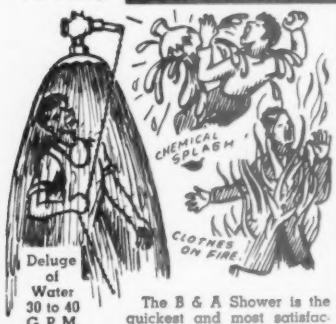

The B & A Shower is the quickest and most satisfactory way to saturate a worker with gallons of water the instant an accident occurs, to prevent a disfiguring burn—even a fatality.

Special shower head, no holes to clog—can be used where unfiltered water prevails.

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DISFIGURING FACIAL CUTS AND BURNS!
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THIS HAPPENS WHEN UNPROTECTED GLASS BOTTLES ARE BUMPED

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are widely used for the safe handling of glass bottles containing harmful chemicals; also the storage and recovery of expensive serums, biologicals, and other costly products.

Painful cuts, disfiguring burns, loss of eyesight, or even a fatality, do result from corrosive liquid splash and flying glass when unprotected bottles shatter.

5 PINT
1 GALLON
5 GALLON

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BENSON & ASSOCIATES, INC.

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the past quarter century are hardly more remarkable than the prodigious and fruitful labors of Edison and his associates at the beginning of the electrical age.

"Light for Freedom — Power for Progress" is the Jubilee slogan. Both the hot and the cold war periods have shown the importance of power for industry in keeping the light of freedom bright. But electrical development has also made possible unparalleled living standards, with all they mean to the progress of civilization.

On a per capita basis, America's industrial production has tripled in the past 32 years. The amount of electricity used for each unit of production has almost doubled, while the number of manhours per unit, have decreased by almost 50 per cent.

In that same period, total manhours per manufacturing worker has decreased by 10 per cent, while use of electricity per manhour has risen almost 4½ times. Electric power has eased the worker's burden and made possible higher pay and better working conditions.

Electric Tools

Electrical tools, which have made a great contribution to industrial progress, can be grouped into four broad categories: lighting, motors, heating devices, and electronics.

Lighting is a basic industrial tool of primary importance. The well lighted plant is usually an efficient plant. Production under proper lighting shows a definite improvement in the quality of the product and a corresponding decrease in the spoilage of units. Furthermore, proper lighting reduces accident hazards and worker tension, thus resulting in fewer accidents and better worker morale.

It is virtually impossible to count the number of motor-driven tools used in industry today. Our modern assembly line method, which brings the tools to the work as it moves, would be impossible without electric motors. They mean more horsepower for production, with more flexibility and greater efficiency.

Materials-handling accounts for a large part of production costs, since about 50 tons of materials must be handled to manufacture one ton of product. Motors in conveyor belts, in trucks and in special handling devices all help to increase speed and efficiency while eliminating many of the hazards of manual handling.

Heating devices used by industry are many and varied, from electric arc furnaces for steel making to small immersion heaters for maintaining temperatures in liquids.

The use of arc melting furnaces is growing rapidly in the steel and automobile industries. Both batch and continuous-type heat-treating furnaces, run by electricity, are being used throughout industry. Induction heating is showing great strides. Radiant and infra-red heating have wide applications in drying processes. Strip, sheath and immersion heaters are all growing in industrial use.

It is estimated that by 1962 the kilowatts of industrial electric heating equipment will increase by 250 per cent and that their use of power will reach 112 billion kilowatt hours, one-third of the total industrial consumption of electricity.

The fourth group of electrical tools, electronic devices, also have many and varied applications which are just now beginning to show their potential promise. Electronic controls make possible completely automatic operations. Electronic controls of a different type make vast improvements in quality production control. Electronic devices are being used to protect operators of certain types of machines.

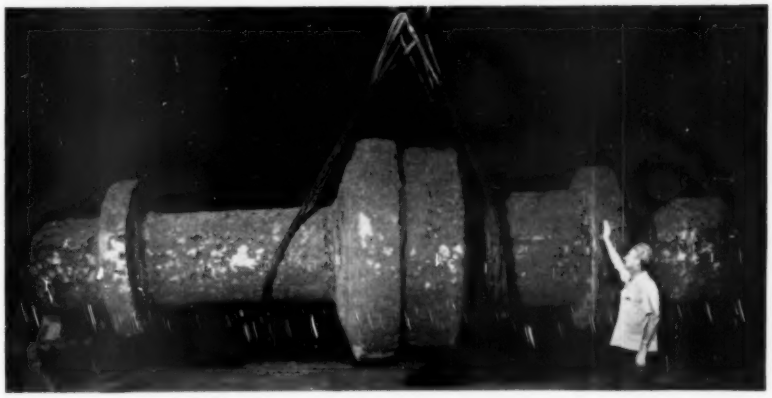
Industrial progress through electricity can be typified by the contrast between the small motors used in Edison's Menlo Park demonstration in 1879 and the automation assembly lines already in use in the year of Light's Diamond Jubilee. This progress will continue, for it is estimated that industrial use of electricity will almost double in the next 10 years.

Better Lifts with Carefully-Chosen Slings

The selection of slings requires close study, for no one type of sling is suitable for all lifts. Such factors as weight and contours of load, height of lift, shape of crane hook, etc. greatly affect the choice.

And of course, there's always the matter of economy. If the right slings are chosen, better, easier lifts will result and the slings will repay their owner with maximum service life.

Shown here are a couple of jobs requiring entirely different slings. In each case the choice was appropriate. The pipe lift was easily handled by Bethlehem Torpedo slings equipped with hooks, which made it possible to attach the load with no lost time or lost motion.



For the other lift, involving heavy tonnage, big braided slings were needed—slings combining great strength and flexibility. Here again a thoughtful selection paid off in speed and ease of handling.

Your own lifts may not be at all similar to these two. But Bethlehem makes every kind of sling—grommet, braided, single-part, bridle, and special—and we can supply them tailored exactly to your needs. What's more, if there are some lifting problems requiring particular study, our engineers will gladly help you iron them out, right in your plant or office. This engineering service is offered with no strings attached; there is no obligation or cost on your part. So, feel free to check with us at any time. Whenever you need us, we'll be there!

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On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation

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BETHLEHEM WIRE ROPE SLINGS

MAKE THE TOUGH LIFTS EASY

BETHLEHEM STEEL

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MATERIALS HANDLING
DEVICES

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SIZES

LIFTING CLAMP

TWIN LIFTER

HAND GRIP

DRUM TILTER

4 SIZES

DRAG CLAMP

3-M-1

DRUM OPENER

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Fiery Test

Staff members of the International Labour Organization don't do all their research work from behind desks.

Here I. T. Cabrera, of the Occupational Safety and Health Division of the ILO, tests a new material now on the market for industrial fire fighters. Made of thin cotton, the fabric has been coated with aluminum foil for heat reflection. According to tests made, it provides good protection against heat. It is flexible and light in weight.

The ILO is a specialized agency associated with the United Nations.

Honored by Forestry Association

REUBEN B. ROBERTSON, SR., chairman of The Champion Paper and Fibre Company board, has been honored with the annual "distinguished service" award presented by the American Forestry Association for his outstanding work in the field of conservation in business and industry.

In the recognition, the widely-known Asheville, N. C., industrialist was paid high tribute for his nearly fifty years of leadership in the pulp and paper industry. With the award, a beautiful, engraved plaque, Mr. Robertson was presented with a scroll signifying a life membership in the American Forestry Association.

Named as "Man of the South" in 1951, Mr. Robertson is a past president of the American Paper and Pulp Association, a past director of the National Association of Manufacturers, and served on the National War Labor Board during World War II.

Plan Approval Seal for Sanitary Supplies

USERS OF SANITARY SUPPLIES, together with producers and distributors, will have a chance to air their views on ways to improve standards of quality for products and equipment in the field when the Industrial Housekeeping Safety Guild holds the trade's first major show in Atlantic City.

The Guild's annual convention, scheduled for November 6-11 in the Ambassador Hotel, will be highlighted by a forum on setting up a trade-wide seal of approval.

Brem Levy, Deputy Attorney General for the State of Pennsylvania and newly elected president of the Guild, will moderate the panel discussion, to be held Nov. 9. The benefits of setting up the trade's own "bureau of standards" will be outlined by Dr. Harry Beloff, of Philadelphia, the Guild's vice president and director of research.

To qualify for the Guild's seal, manufacturers would be required to maintain certain principles of labeling, packaging and merchandising as well as to submit initial samples of their products for testing by the Guild's independent laboratories in cooperation with existing Chemical Specialty and other interested trade bodies.

Faces in the Lobby

—From page 123

science's sake, and for the sake of looking good on your job, you have to do something.

"So, be a specialist. Now, wait. I know you have the whole safety problem. But you can't do it all well, so now you're doing none of it well. Pick something and do that well . . . Sure you can. What's your top problem — material handling, probably, or eyes, or what is it? Okay, so it's machine guarding, and you aren't going

Long Distance Rates Are Low. These are the *daytime* Station-to-Station rates for the first three minutes. They do not include the federal excise tax. Long Distance rates are even lower after 6 o'clock every night and all day Sunday.

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LONG DISTANCE
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or money

Long Distance quickly puts you in touch with just about anyone, anywhere.

It eliminates "hit-or-miss" sales trips by arranging appointments in advance. Helps you keep in regular touch with out-of-town customers. Clears up questions and complaints. Simplifies buying. Speeds deliveries.

And because telephone contacts are friendly and personal, they help create a feeling of good will at both ends of the line.

To get more things done, more quickly, reach for the telephone.

Long Distance Doesn't Cost—It *Pays*

We have some specific suggestions for the profitable use of Long Distance in Sales, Purchasing, Administration, Traffic, Production, Engineering and Accounting. A call to your Bell Telephone Business Office will bring a representative to discuss them with you.

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GET PROTECTION from INTENSE NOISE

Straightaway®...

"muff" type sound protectors give superior protection against both high and low-frequency noise, plus safe, non-irritating comfort.

HELMET TYPE
- For outdoor use.
- Same Sound Protectors in cool Nylon mesh or shrink-proof cotton twill.
- Standard sizes.
- Colors: Brown, Green, Gold.

HEADBAND TYPE
- For indoor use.
- Constant-pressure.
- "No-metal" contact.
- Easily adjusted.
- Quick on and off

Features:

★ EFFECTIVE
★ SANITARY ★ SAFE
★ COMFORTABLE
★ ALLOWS HARD HAT OR GOGGLE USE
★ TRIAL OFFER AND UNUSUAL GUARANTEE

Write for details and prices

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360 Park Ave., Worcester 2, Mass.

Straightaway

to get good at that in a hurry. Next worst is material handling? All right. Become a specialist.

"In a little plant like yours, you can become an expert quick. Go down and talk to every guy in the Exposition who has any material handling equipment. Here are a few names in the field to write to. Glom on to every bit of literature in the field. Buy yourself a copy of the *Industrial Safety Manual* and read it on material handling. Read every article on the subject in the ten-year file of NATIONAL SAFETY NEWS you've got. The heck with the sectional sessions this year. Take your Congress Program and go to every session with material handling talks. Take notes like mad.

"Lots of what you'll get won't apply to your plant, but don't worry about that. Get all the dope you can, and then go home and study out how they are moving stuff in your plant. I'll give you hundred to one odds you can figure out shortcuts that'll stop accidents and save the plant money. Then you're in business as an expert, and maybe they'll listen to you on other things."

His eyes brightened with hope. "I could do it," he said. "I'm really sure I could. It's kind of faking, I guess, but—"

I glowered at him. "In this business nothing is faked that stops people from getting hurt."

He really smiled then, really looked happy. "I'll get on it right away," he said. Then he got another idea—I could see it coming. "And next year, maybe I could concentrate on guarding those machines and be an expert—I mean a specialist on that."

I thought, "Lord, give me eloquence." And I said, "Look, Bort, don't try a trick in a field where tricks don't work. Guarding is tough, precise, headache-ridden work. It'll take you out on the shop floors into direct, headon collision with men who know machinery. You'll be involved in a thousand details and considerations no quick brush-up will let you understand. No, if you've got a guarding problem, get a good old safety engineer who's been through the mill, and let him work it out for you.

"If you really have to be another kind of a specialist next year, tackle eyes. That's a tough problem, too, but from what you tell me, you can spiel the ABC's in your plant and sound wise as Solomon. Guards—man, there aren't twenty really top guarding men in this whole blooming Congress!"

Bort drifted off in a spray of thanks, and the crowd started sliding toward the Ballroom for the Annual Meeting. I got up and joined them, wondering as I did so whether the advice I'd just given Bort might not be good for me to follow some year at Congress.

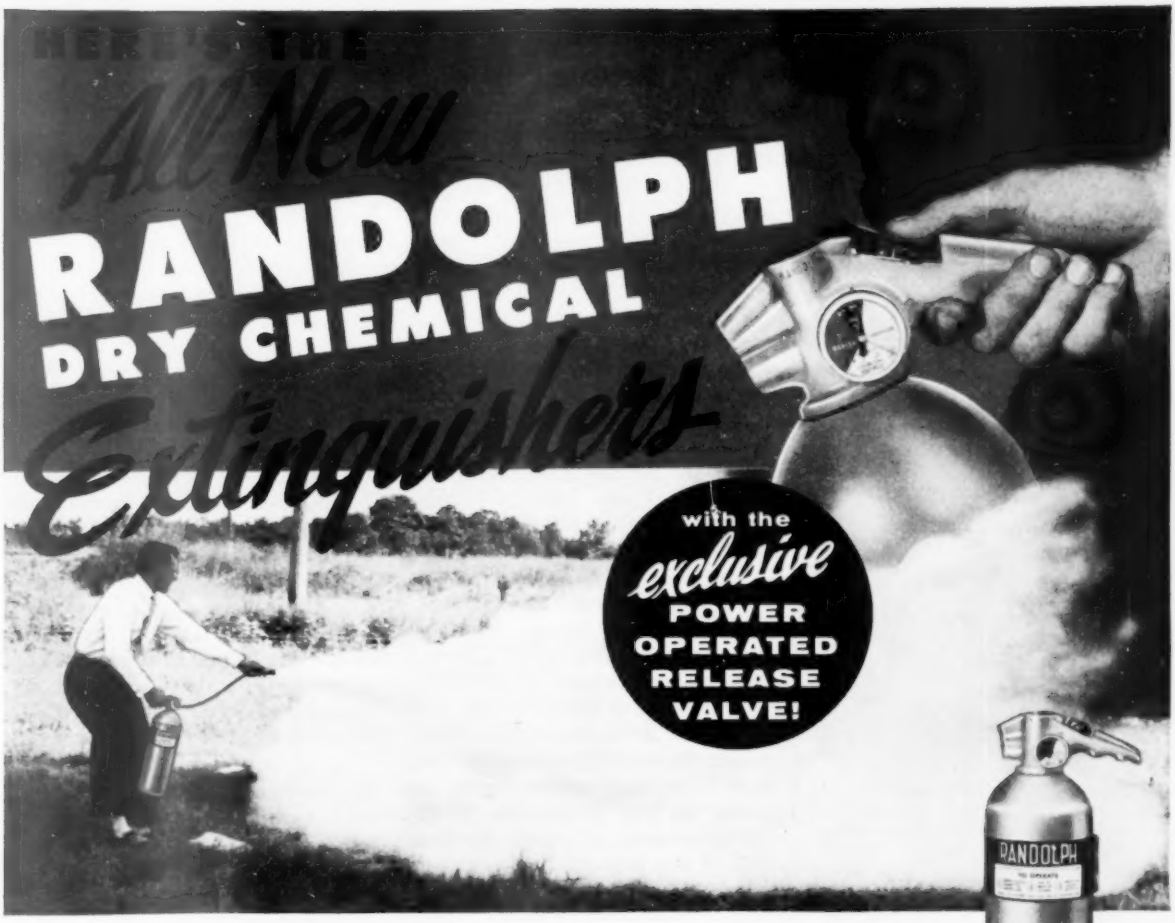
Obituary

ERIC GUILBERT

Eric Guilbert, safety director for Avildsen Tools and Machines, Inc., Chicago, died July 21 after an illness of several months following a heart attack. He was 56 years old.

Eric Guilbert was one of four brothers all engaged in safety work. William, for many years manager of the Safety Bureau of the Buffalo Chamber of Commerce, died in 1942. Harry, safety director for the Pullman Company and famous throughout the safety world as a crusader for eye protection, died in 1945. The surviving brother, Fred, is with Chicago Eye Shield Company. One of their last meetings was at the 1940 National Safety Congress when they posed for a picture for NATIONAL SAFETY NEWS.

Eric had been safety director for Avildsen since the founding of the company in 1940. His flair for dramatizing safety soon became known outside the company and his services were in demand in community safety activities. He became an official of the Elmhurst Safety Council and was home safety counsellor to many clubs and civic groups in the greater Chicago area. He conducted a syndicated newspaper column and wrote numerous articles for national publications.



New ... Power Valve: Like the power steering in your automobile, the new Randolph Extinguishers provide "finger-touch" operation. Cylinder pressure does the heavy work of opening main release valve —gives instant surging power or instant positive re-sealing.

New ... Randolph Color Dial: No more wondering! One glance tells you whether the extinguisher is fully charged, partially charged or fully discharged.

New ... 500 Pound Power and Range: A full 500 pounds of pressure drives the powder farther, gives the fire fighter a 20 to 30 foot range— cold weather or hot!

New ... Push Button Release with "swing-aside" Button Guard! Solid brass cap protects button-trigger. Just flick to right or left and touch the button. Panic-proof, fast!

All Models Underwriters' Approved

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for safety and comfort

• Maximum protection for your workers' feet is guaranteed with "Sankey" improved foot guards. Spring fastening device or rubber strap makes attachment quick and simple.

• All-day comfort without loss of efficiency is assured with this lightweight guard. Also available with full rubber sole.

• Absolute freedom of leg motion, utmost protection and comfort come with the leg-contour shaped "Sankey" fibre shin guard (left).

• Fibre knee-shin guard (right) provides flexible knee movement on jobs with both knee and shin hazards.

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ELLWOOD SAFETY APPLIANCE CO.
219 Sixth St. • Ellwood City, Pa.

A Safe Tomorrow

—From page 103

action. Through these efforts, safety has taken on a new meaning. We now look upon it as a way of life and we have not only lengthened the distance between the cradle and the grave but have given new significance to the word security."

Friends of Minnesota, I hope from the bottom of my heart that when your Council meets in 1979, or earlier, it will be possible for a speaker to offer such remarks. I am confident that he will be able to do so, for we have begun to realize that our efforts in this vital field of safety can no longer be "after the fact." It is not enough to prevent the recurrence of injuries. Hazardous situations, whether on the highway or the farm, in the home or the factory, must be searched out—anticipated *before* that first injury occurs.

Now it is no insult to safety people to say that efforts in the past have been concentrated on "after the fact" techniques. When safety came of age during the first half of this century, there was so much to do that the essential need was to correct those areas known to be most hazardous. This took time, and of course, each passing day brought new situations in the everyday life of our people.

The automobile, I believe, is a perfect example. Some of you can remember, also, those early days of the automobile—the annual springtime siege with mud and flooded streams, the winter difficulties of starting and the dangers of stopping. One of my favorite recollections of that era is that the young boy who was required to write a 250-word essay on the automobile. He submitted the following:

"My uncle bought a motorcar. He was riding in the country when he got stuck in the mud. I guess this is about fifty words. The other two hundred are what my uncle said when he was walking back to town."

Lack of paved roads, however, was only one of many difficulties to be overcome. Our city streets had been laid out for horse-drawn vehicles. Our country roads followed the easiest routes between cities, as well as from farm to farm. They were not designed for high-speed cars, trucks and buses.

It was always a race between progress and safety, and only in recent years have we been able to draw abreast of the situation. Our super highways, cloverleaf intersections to eliminate crossroads, and many other engineering achievements have brought safety into a position to win that race. As a member of the steel industry, I would be remiss if I did not mention that metallurgical progress played a role in the mechanical improvements that automotive engineers have incorporated into the design and construction of the automobile itself.

All of these recent achievements are beginning to pay dividends. In fact, the cracking of the four-minute-mile in track and the passing of the sound barrier in air travel may soon have their counterpart in safety. There is promise now of finally breaking through the barrier of 7 fatalities for every 100 million vehicle-miles traveled. During the first four months of this year, the rate have averaged 6.1 fatalities, low enough, it is believed, to give us a 6.4 performance in 1954.

Planning Now . . .

But as we approach another era of great technical advances, we must take every precaution to avoid being caught off-guard again. Safety must be an item of major importance in our planning for the future. It must be engineered into each new product, each new industrial process, each new aspect of life in the days ahead. The safety slogan of today might well be: "Plan today for a safe tomorrow." This is the challenge to men of safety in this year of 1954.

Medical science, for example, is giving us a greater understanding of the effect of early infectious diseases on adult life. Such knowledge might prove of value to safety by providing clues to better placement of individuals in certain industrial job areas from the standpoint of temperament, longevity, phobias, and so on.

Through antibiotics, the so-

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Use AMPCO* Safety Tools

for every job where fire can occur!

HOW TO CHOOSE SAFETY TOOLS

For tools to be used in the vicinity of acetylene or similar gases — specify Ampco Monelt Tools.

For tools that have cutting edges or gripping teeth — specify Beryllium Copper Tools.

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AMPCO Safety Tools won't emit dangerous hot sparks. That's why they protect life and property in spray booths, grain elevators, and other locations where there may be explosive vapors or dust. More than 400 different items in the Ampco Safety Tool line — the largest available anywhere — mean you get exactly the items you need for your hazardous jobs.

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Your Hard-to-lick Problems In Hand, Wrist and Forearm Protection

Maybe your problem is hand-and-arm injuries that hoodoo production. Maybe it's finding special protective gloves that won't make fingers clumsy. *Whatever it is, check Jomac!* We manufacture many special-purpose work gloves, pads and sleeves—a few of which are shown. Look them over, then write us about your specific problem. Our long experience may give you the answer at once. And where necessary, we'll custom-build the gloves you need.

M-225 GLOVE

"Inside-out" glove with cushioning loop-pile fabric inside—for use where lint is a problem, especially in the enameling trade. Available with or without liner, with fingers and knit wrist.

H-167 GLOVE

Knit-wrist without fingers—to give full hand protection without loss of finger freedom. Excellent for small parts fabrication and assembly work in a wide variety of industries.

1120 GLOVE

Fully coated, plastic gauntlet with jersey back and Jomac cloth front for full finger flexibility. Replaces heavy, expensive leather gloves in many plants—for many jobs.

S-5 SLEEVE

9"-long safety sleeve for use in protecting forearms against cuts and abrasions. Various styles and sizes available to meet conditions in a wide range of industrial applications.

Jomac work gloves, pads and sleeves are made from special, twisted-loop Jomac fabric—tough, long-wearing, resilient. Jomac's famous loop-pile construction armors the hands against bruises, cuts and abrasions. Yet its flexibility permits full finger freedom. A postcard brings you full particulars—plus information on your particular problem.

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called wonder drugs, medical research and a continually improving standard of living, the average life span of individuals in this nation has increased an estimated twenty years since the turn of the century. Greater efforts in safety can help to make these twenty years a productive and enjoyable time for each citizen, or lack of proper safety precautions can by the same token deprive us of them.

Science is also gaining knowledge of why various elements, such as copper, zinc, manganese and cobalt, are required in minute quantities in the human body. These trace elements give indication of overcoming glandular and systemic disturbances and may help us finally to prove or disprove the condition frequently referred to as "accident proneness," as well as those unsafe acts that defy explanation.

We have already reached the point where we should take a long look forward and inquire more searchingly into the psychology of behavior. Too many of us are willing to attribute a percentage of our accidents to psychological factors alone. In reality these psychological deviations may be the effect of something deeper, some fundamental cause, some definite, yet undisclosed, physiological factor.

There is evidence that we have not gotten to the bottom of this troublesome area defined as psychology. Suppose we take that long look forward and ask ourselves if there is not a cause for these abberations.

There is nothing mysterious in this exploration. It is merely predicated on an old adage that antedates much of our scientific knowledge: "A sound mind in a sound body; if the former be the glory of the latter, the latter is indispensable to the former."

But all of this research, all of this knowledge will be of little value unless we continue to utilize vision and imagination in applying it to practical purposes. In every area, we shall need more and more safety engineers who are also "imagineers"—men who are constantly exercising their

LOOK... GENCO "FIT-ALL" WINTER LINERS

For Hard Hat Users Are Back Again

Custom Made for All Styles

TWO PIECE STYLE
FOR LACE-IN TYPE HEAD BAND

Made entirely of warm, wool fabric. Has detachable ear flaps which can be removed in mild weather. Fits low on back of neck and has tie strings to hold ear flaps down. Will fit any size head.

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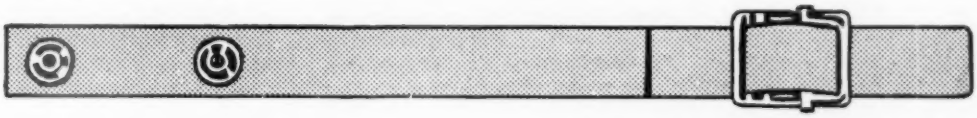

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This Liner has six eyelets spaced correctly so Liner will fit right. Is also made of wool in an attractive herringbone pattern. Can be washed or dry cleaned and will not shrink or stretch out of shape.

NOTICE: These Liners are now in stock and can be shipped immediately as winter is just around the corner.

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Fyr-Fyter's KARBALOY*

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HERE'S PROOF! ROARING TEST FIRE OUT...in 11 SECONDS!

*Exclusive Chemical Liquid . . . available only in Fyr-Fyter Loaded Stream INSTANT Extinguishers.

This raging inferno, with flames shooting 20 feet in the air, is an Underwriters' test fire in a 100 square feet pine panel.

When fire is highest, INSTANT'S KARBALOY LOADED STREAM is aimed at fire. The roaring blaze was killed in record time . . . 11 short seconds!

This test fire is conclusive proof of Instant superiority! Karbaloy, the extinguishing liquid developed by engineers now prominent in atomic research, killed the fire in one-third time required by ordinary extinguishers . . . and only two quarts of liquid was used! Karbaloy also fireproofs as it extinguishes . . . preventing flashback or fires in rubber and other combustible materials that start up again after being put out by ordinary chemicals.

Fyr-Fyter Instants are designed to stop the *most prevalent fires* in wood, rubber, fabrics and other general combustibles. They require no recharging, except after use, and need no protection from freezing. The long-range Loaded Stream can be discharged at a *safe* distance of 45 to 60 feet to fight flames that cannot be approached at close range. No other extinguisher provides the combination of advantages found in Fyr-Fyter Instant Extinguishers!

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☐ Send full details on Fyr-Fyter Instant Extinguisher.

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DEPT. 20 FF-3

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imaginative qualities to anticipate hazardous conditions and correct them.

Within recent years, for example, the steel industry adopted a device called the jet tapper. As most of you know, steel is removed from an open hearth furnace by knocking out a plug which blocks the tap hole in the back of the furnace. For many years, this was done by an employee using a long oxygen lance which burned the plug out of the hole. Despite our efforts to make the job as safe as possible through protective clothing, injuries continued to occur.

Then imagineering took over. Why not a shaped explosive charge to blast the plug out of the open hearth tap holes? And the jet tapper was born, tested, perfected, and is now standard procedure. This practice has virtually eliminated injuries since it has greatly reduced the exposure of employees to hot metal.

There are other examples not only in the steel industry, but in every area—so many, in fact, that I could not list all of them here. I believe, however, that most of the safety devices and techniques mentioned as being commonplace 25 years from now are well within the realm of possibility. Some of them could be made practical today. We already use elevated walkways in certain industrial and community areas, and it may prove practical to expand this idea to meet additional pedestrian problems.

An article in a business paper several months ago mentioned "talking mats" now used in a New York store. When a customer steps on the mat, a recorded sales talk begins automatically. How many safety people read that article? And how many of them visualized the possibilities of such an attention-getting device to sound warnings during manual operations in today's industrial plants? It might be used in connection with lockout switches controlling electrical equipment, or around fixed machinery to warn employees to wear safety glasses or remind them of other safety precautions. At the top of stairs, it

might advise employees to descend slowly and use hand rails. Uses for such a device seem almost limitless.

Television is no longer a novelty, but an accepted tool of commerce and industry. I believe it must also become a tool of the safety engineer.

In the field of automation lies the answer to countless present-day safety problems. Here in this one area, with its fabulous potentialities for removing employees from close proximity to hazardous areas, our safety people may well find the millenium for which they have been searching.

It must be recognized, of course, that the cost of such equipment may preclude its immediate use in many plants and operations. But I firmly believe that it is only a matter of time until the safety imagineer, who has taken it upon himself to become thoroughly informed of where and how automation can best be utilized, will find his knowledge of great value in planning future automatic operations.

For a Safe Tomorrow

Last March, our nation was startled by the disclosure of the powerful destructive force of the hydrogen bomb capable of annihilating major cities. But throughout the lifetimes of everyone in this audience, we have been living daily with the AD-bomb—the "accidental death bomb" that is being detonated every five minutes somewhere in this nation.

Over the past 25 years, this product of our carelessness has taken an average of 97,000 lives every year. It may come as a shock to learn that unless we are infinitely more successful in eliminating accidental deaths in the next 25 years, the AD-bomb will have wiped out the equivalent of the combined present populations of Duluth . . . Minneapolis . . . St. Paul . . . Superior . . . Milwaukee . . . and my own community of Pittsburgh.

When we think of tomorrow, we think in terms of automation, solar energy, atomic power, magnetic propulsion, radio astronomy, trace elements, and similar discoveries. These developments

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COMFORT

LONG WEAR

with TOP NOTCH

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OILACE COVERALL All neoprene, net lined short boot with adjustable knee strap and black neoprene non-skid design outsole. Also available, a Neoprene 12" Snugfit Boot and a regular Neoprene Short Boot.

WORKIN 6" all rubber work shoe with the appearance of a leather shoe, DURATEST non-skid design outsole, cushion insole. Steeltoe or plain.

BAR-FLEX SHORT All black industrial boot with white Bar-Flex outsole, the patented outside arch and heel for more comfort and traction. Also available, the regular Industrial Boot in all heights, and a popular price Utility Boot.

TOP NOTCH INDUSTRIAL BEACON FALLS CONN DURATEST SOLE

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There's a big difference *in floor absorbents*

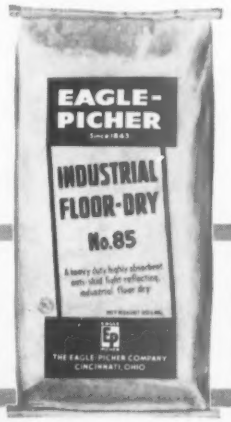
Here's proof in a report from H.H. Rice—Master Mechanic in a leading rubber and tire company.
"After witnessing your comparative demonstration, we decided to use Eagle-Picher Industrial Floor Dry. The results have been highly satisfactory."

You, too, can witness the difference in floor absorbents! With his portable laboratory, your Eagle-Picher man will analyze your floor absorbent *right in your office.* You may actually conduct the test yourself! Without obligation, of course.

Here's what the test shows—

- The amount of oil and water absorbed for given bulk.
- The cost of your absorbent in terms of absorption and coverage.
- The amount of coverage you're getting.
- The benefits of your absorbent in terms of safety and reflective ability.

You'll see that Eagle-Picher Floor-Dry is insoluble, chemically inert and non-combustible . . . that it combines light weight for exceptional coverage with light color for brighter, safer working areas. Write today for the full story.



EAGLE-PICHER INDUSTRIAL FLOOR-DRY No. 85

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Since 1843

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are so much with us, even now, that they may well be household words in a matter of years, perhaps months in some instances.

To engineers and production men they are at least blueprint realities. Safety engineers, or "imagineers," cannot afford to stand on the sidelines and speculate as to what the outcome might be in this race against time. Your ideas, your plans, must be in keeping with the kind of life that will emerge in our factories, in our homes, on our farms and on our highways as a result of these far-reaching developments.

It cannot be overlooked that our nation faces a tremendous increase in population during the next quarter century. Highway and other transporation facilities will have to grow and improve to meet these increases. Already there is an expanding movement to the suburbs by millions of Americans. This trend, as it continues, will create the need for greater mobility between home and work and shopping areas.

The challenge, then, is simply this: *Will 1954 thinking solve the safety problems of tomorrow?*

The answer must come from you.

Operation Live Longer

—*From page 142*

olis Speedway, Doxie Moore, administrative assistant, and Horace Coates, executive secretary to Indiana's Governor Craig, were on hand to share in the acceptance of the cars.

In Hagerstown, the Perfect Circle Corporation got in on the program with both feet. They put out a special mailing to company employees on the hazards of vacation driving. Bob Beeson, safety supervisor, added that booklets were being distributed to all company employees before their vacations.

Perfect Circle is in Trooper Bever's area, so we asked him how he liked the way the program worked. "Swell," retorted the tired trooper, "I don't object too strenuously when my wife won't speak to me, and I can stand it

when the kids fail to recognize me. But, when my own dog bites me, I think it's time for a change."

Bever's gripe was based on the fact that all 11 troopers have many times had to work a 16-hour day to make the contacts necessary for the success of the program. But it was a happy gripe. The kind that soldiers specialize in when the campaign is going well.

You could list corporations and companies that have joined the program until a blue chip list were presented. And the work of Troopers Jackson, Hunter, Allenduff, Lowe, and Bell would only be a repetition of the others.

A quick switch to Northern Indiana will illustrate this. We are in Trooper Ranich's district here. Typical of the reaction here was that of Standard Oil Company of Indiana. J. H. Engle wrote all Whiting Refinery supervisors to go "all-out on the monthly theme programs." Len Otto, director of safety for Lever Brothers, Hammond, asked Ranich to talk to all supervisors, and the company bought up pamphlets for regular distribution to company personnel. In Indiana Harbor, J. L. Ridinger, director of safety for the Inland Steel Company, asked Ranich to address his safety staff, followed it up by inter-office memos to all department heads on safe driving practices.

Indiana Troopers ran into some odd cases. Down in Montgomery, Don Smiley found that the Amish and Mennonite sects had crashed head-on into the machine age. A church ruling made it possible for church members to incorporate mechanical aids in farming and the younger folk took to the highways.

It took the rest of us a half-century to get acquainted with the motor age, but the Amish and Mennonite population only had from three to seven years to integrate themselves into mechanization. The result—a series of accidents that disturbed the elders. Seven deaths and 20 motor accidents in six months called for action.

Amos Whittmer of the Mennonite Church, and Ben S. Wagler of the new order Amish led the

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SAFETY TANK CAR PLATFORM

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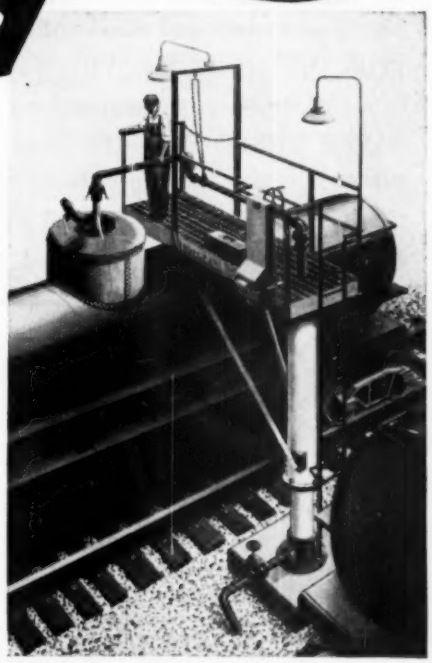
Write today for information how Nichols Safety Platforms can handle your fuels, chemicals, foods and other liquids.



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FORGING MADE EASIER. No sharp corners to hammer into surface as on octagon and hexagon shapes.

SAFER PERFORMANCE. Shape reduces possibility of pieces chipping and splintering off head.

FORGING CRACKS GREATLY REDUCED.

REDUCES LOSS OF TOOLS AND SAVES TIME.

Buy ATLANTIC 33 — *it's a* STEEL

SUGGESTED FOR THE FOLLOWING PURPOSES

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- Shear Blades
- Boring Tools
- Rivet Busters
- Track Chisels
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Write for descriptive literature and price list. Dept. NS-3

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movement. In June, Don Smiley took his movie projector out one night and flashed it on the side of Ben Wagler's barn. Three hundred Mennonites and new order Amish sat in at the safety meeting. Three weeks later Smiley put in a full eight-hour detail at a driver-training school with 400 of the church members in attendance. And the program is still going on.

Down Plainfield way, Trooper Ray Byroad made a call on Robert Huntington, personnel director of the Public Service Company of Indiana. As soon as the conversation turned to safety, Mr. Huntington called in Ralph J. Young, safety engineer, and they worked out a program for the main office and seven sub-districts, standardizing the off-the-job approach for company personnel.

In every case from United States Steel Corporation to the smallest plant, the Hoosier troopers found a warm welcome and a sincere desire to work with the community and the state agency. From all indications the program is working well.

This is the record: For the first six months Indiana had 70 fewer traffic deaths, cut injuries by 694, with a drop in the total number of accidents of 4,573 as compared with the previous year.

Governor Craig summed it up in his message: "I sincerely believe that, through the determined effort of all our people working together, we can cut the needless waste of human life and property by at least 25 per cent during the second half of 1954. By doing this, we can add more than 150 lives to the 70 already saved, prevent more than 4,000 serious injuries, and save $14,000,000 in property damage and other costs.

"The extra effort put forth by official agencies, industries and individual citizens will be a small price to pay for the gains which can be made in saving human life and suffering."

They seem to have rung the bell on preventing off-the-job accidents in Hoosierland. And, maybe, they're blueprinting the format for a national approach to the problem.

Seeing Eyes

—From page 121

one considers that practically all are preventable by known and relatively inexpensive means. In keeping with industrial progress, eye protective devices have been developed and improved until today there are positive means available for providing adequate protection in each and every occupation or avocation. In spite of this, the National Safety Council estimates that one out of every 575 workers suffers a disabling eye injury annually. (A disabling injury means the loss of one day or more from work.)

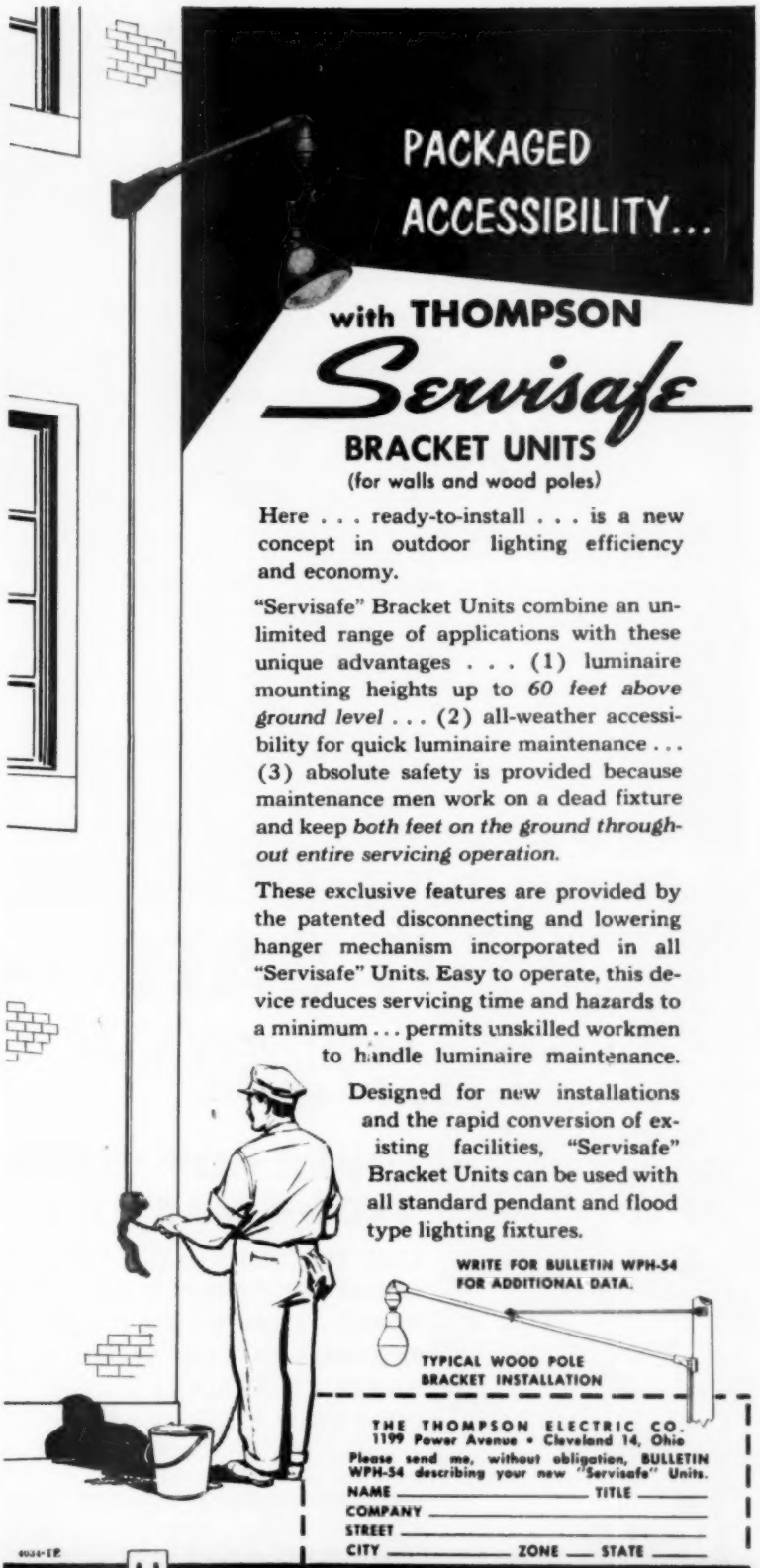
What about non-disabling eye injuries . . . those losing an hour or two from work? What records are kept on these? Who knows the cost, and what are the consequences of the so-called minor injury? Let us take a non-penetrating foreign body incurred on the job figured on an hourly wage of $1.60.

Trip to plant hospital—one-half hour	$ .80
Nurse's time plus hospital, overhead, Medication, etc.	3.00
Loss of machine time—one hour	5.00
Loss of foreman's time	1.25
Trips to hospital on leaving shift and upon returning to work on next regular shift—one-half hour	.80
	$10.85

This cost is a hidden one, oftimes is ignored by management. A brief perusal of the eye cases of this type in your plant hospital records will demonstrate the cost to your plant. It should be noted, also, that in plants not having hospitals, or in cases where it is necessary to send employees to the eye doctor's office, the cost will be augmented considerably.

At the Burlington, N. J. plant of Hercules Powder Company no serious eyes cases have occurred in over three quarters of a million man hours. The hazards in this plant are splashings from acid and arc flashes. Two cases where sight was endangered by hot, soft and corrosive "gunk" splashes, were stopped by the protective devices furnished by management.

—Next page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ACCESSIBILITY...
with THOMPSON
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BRACKET UNITS
(for walls and wood poles)
Here . . . ready-to-install . . . is a new concept in outdoor lighting efficiency and economy.
"Servisafe" Bracket Units combine an unlimited range of applications with these unique advantages . . . (1) luminaire mounting heights up to 60 feet above ground level . . . (2) all-weather accessibility for quick luminaire maintenance . . . (3) absolute safety is provided because maintenance men work on a dead fixture and keep both feet on the ground throughout entire servicing operation.
These exclusive features are provided by the patented disconnecting and lowering hanger mechanism incorporated in all "Servisafe" Units. Easy to operate, this device reduces servicing time and hazards to a minimum . . . permits unskilled workmen to handle luminaire maintenance.
Designed for new installations and the rapid conversion of existing facilities, "Servisafe" Bracket Units can be used with all standard pendant and flood type lighting fixtures.
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TYPICAL WOOD POLE BRACKET INSTALLATION
THE THOMPSON ELECTRIC CO.
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Please send me, without obligation, BULLETIN WPH-54 describing your new "Servisafe" Units.
NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ ZONE ___ STATE _____
THE THOMPSON ELECTRIC CO.
1199 POWER AVENUE • CLEVELAND 14, OHIO

Cover-all plastic goggles are mandatory in this plant.

An interesting observation was made during an interview between the plant manager and the writer during the preparation of this paper. The manager picked up his phone and fired this question at his safety director: "Why don't we have eye accidents here?" The reply was quick: "Because we all wear safety goggles."

As a result of this eye safety program, under highly hazardous conditions, only four cases involving eyes were sent to the company doctor during the seven years this plant has been in operation. These were minor cases with no lost time.

Goggles Are Cheaper!

The placing of guards, the wearing of goggles, however, are but part of the job to be performed. You must go further to have a successful program.

Your company purchases expensive equipment and you hire men to operate these machines. You guard all moving parts and you supply protective equipment with strict instructions as to its use. You congratulate yourself knowing that your job has been well done, up to this point. You find that sometimes eye accidents are reduced but often the spoiled work shows an increase; the trips to the dispensary for headache remedies become frequent; and finally the worker puts the goggles in his locker or tool box. Sometimes, if supervision is known to be strict, the lenses are punched out of the frame and the goggles worn without lenses. You wonder why? Didn't you buy the best protection from a reputable house?

The excuses are many. In one plant several years ago, we had 80 different excuses for not wearing goggles. They were "too heavy," "they hurt his nose or ears," "they didn't look well," and so on.

They were too heavy, because the weight was not distributed correctly by proper fitting. They *did* hurt the nose or ears because they were not properly fitted. They didn't look well—the girl who made this complaint had a thin little face which should have taken a 40 mm wide lens, and some storekeeper in a hurry

handed her one big enough for a heavyweight prize-fighter. She looked and felt like a gargoyle.

Most safety glasses could be designed so that more of the area around the eyes would be protected and the angle of vision increased. The insistence of the manufacturers to continue producing the drop eye glass rather than a wider angle type is not quite clear. In aviation, shooting and other sports, goggles are made functional and colorful. Resistance to wearing them is unquestionably low. A face-form, wide-angle glass would not only permit a wider angle of vision, but would aid in preventing accidents from the side, above, below and at the nasal angle. Colored frames would not only do much to identify the wearer of goggles for specific occupations but also would glamorize the wearing of such glasses, particularly among women workers. Safety glasses must be properly fitted and adequately serviced to be of any value.

"They hurt my eyes." This can be true for several reasons. Safety glasses have thick lenses and if not properly fitted can induce distortion and consequent visual disturbances. They can aggravate a refractive error in need of correction. A fairly safe rule in case of complaint of a worker wearing plano lenses is to refer him to an eye man of his choice for expert opinion and advice. Sometimes they hurt for purely psychological reasons. I have seen employees refuse to wear safety glasses at work, but wear fancy sunglasses off the job.

Refractive errors are common defects of the eye. Near-sightedness, far-sightedness, astigmia, old-age vision, and combinations of these, are the basic ones. Faulty muscular coordination, fusional difficulties, and defects in the field of vision, follow in order of importance.

The various symptoms of poor eyes are generally those associated with stress and strain upon these organs. They may manifest themselves in and around the eyes, head, and by reflex action to other portions of the body. They may also accompany faulty seeing. These symptoms are:

Amazing new Taylor Made
ALLOY STEEL
TAYCO HOOKS

- Extra area above eye assures longer life!
- Large eye reduces joiner link wear!
- I-Beam type design assures greater strength—provides grip for hooker!
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- Wider, deeper throat!
- Resists twisting to greater extent than conventional sling hooks!

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TAYCO GRAB HOOK

Stronger–safer–lasts longer than conventional hooks!

Patented I-Beam type *design*... Taylor's *special analysis alloy steel*... plus complete heat-treatment are reasons for the greater strength and longer life of Tayco Hooks. A larger eye, greater area above the eye and a bigger neck are additional factors. More resistant to shock, grain-growth, work-hardness and side bending than regular hooks. Will not open even under *dangerous point* loading until the working load limit of the chain (for which it is designed) is exceeded! I-Beam design provides a safe gripping area—permits handling more tonnage with less fatigue! Cut replacement and repair costs with Tayco Hooks!

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When Seconds Count in Fire Warning

FYR-LARM "screams out" on immediate heat detection of fire. Gives employees warning for safety and protection of property.

This compact, low cost, wall hanging unit is
APPROVED BY THE UNDERWRITERS' LABORATORIES

Note these important features

- ***No Installation Cost***
  Insert screws and hang up.
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  Merely weigh at 6 month intervals.
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  Your first cost is your final cost.

Fully Automatic • No Wiring • No Batteries

INDUSTRIAL MODEL—
ONLY $15.95 PER UNIT.
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243 BROAD ST., SUMMIT, N. J.

1. Headaches
2. Dizziness
3. Distortion of objects and levels
4. Inability to focus clearly—distance, near, or both
5. Inability to judge distance or estimate depth
6. Double vision
7. Blind spots and areas in the visual fields
8. Asthenopia
   a. ocular distress, pain and headaches
   b. lachrymation (tearing)
   c. oedema of lids (swelling)
   d. photophobia (intolerance of light)
   e. itching and burning of lids
   f. mild inflammation of lids and conjunctiva
9. Neuroses induced by eyestrain
   a. gastric disturbances
   b. nervous irritability
   c. fatigue
   d. mental confusion and frustration from constant effort of trying to see clearly
   e. decrease and increase in heart beat
   f. increase in winking

To do a complete and thorough visual safety program it is necessary to retain a man trained in eye work. A competent consultant (visual) can pay his way many times over in savings to you and comfort and happiness of employees.

Jobs should be analyzed both from a visual hazard standpoint and from a visual performance one. The visual requirements for each job or job family vary with the individual, and only one trained in eye work can determine what is necessary for both safety and ease of seeing. Individual job visual requirements for specific operations must be determined in conjunction with the personnel, safety and engineering departments, and minimum visual standards for each job established. A record of these standards is then kept in the personnel department as a basis for job visual requirements for new hires.

In most plants, it is generally difficult to organize a program within the plant whereby each employee can be completely examined. This is due to the expense of setting up equipment, interference with production and the limitation of time.

There are a number of large plants which have full time eye departments and these have functioned with marked success. However, in most plants, it has been

found that visual screening programs have definite value, and, for the most part, are sufficient for the needs of industry.

A mistake made by many industries is attempting to conduct screening programs without trained eye people. There are hundreds of screening devices gathering dust in our industries for want of proper programming and interpretation of results. A good visual program must be integrated with the work of other departments in industry. Safety, personnel, time and motion study, production and engineering have equal interests and responsibilities in such programs.

For example: At Shell Pipe Line, the cost of eye accidents was $4.37 for each of its 1200 employees. The cost of their program amounted to $4,262 for injuries and $987 for safety goggles. This was due to poor purchasing practices plus an incomplete eye program. Goggles were all of the same size, were not individually fitted, and not serviced. Employees wearing glasses were supplied with coverall goggles—which are often hot and cumbersome.

It was decided to install a screening program, and after one year of operation the cost of eye accidents dropped from $4,262 to $204. The total dollar cost including the cost of the screening program dropped 48 per cent the first year; second year, total $2,695; third year, $1,454; fourth year, $958; expected this year, less than $500.

It was found that 28 per cent of the employees had some type of significant visual disability during the first year.

Three employees had vision in one eye and the records of the company listed them as having vision in both.

More than half the employees referred to optometrists and ophthalmologists had already been wearing glasses; many for a number of years. —*To page 202*

FOR CRAWLING OR DOWN ON KNEES WORK

USE J.L.S. RUBBER KNEE PADS

Price $2.50 Pr.

FOR CLIMBING BE SURE WITH J.L.S. ALL RUBBER LADDER SHOE

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Johnson Ladder Shoe Co.
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THE MOST EFFICIENT SKIN CLEANSER MADE!

A HEAVY DUTY SKIN-CLEANSER without a peer in the industrial field. It has a high anhydrous content and is superfatted for extra mildness. This super mild soap is scientifically blended with an edible corn meal scrubber and a special skin emollient to give thorough, safe cleansing to the dirtiest hands.

COMMODORE—Same formula as "Treet" but extra coarse. Ideal for those who prefer a "rough feeling" soap, yet one that will leave the skin soft and smooth.

An Invitation—We will be glad to send detailed information and prices on these products, and invite you to ask for free sample quantities. No obligation, of course.

LIGHTFOOT BAR SOAPS

PLAIN CUT
Made for industrial use—office washrooms, plant showers, etc.

"24 HOUR" DEODORANT SOAP
A mild toilet soap containing G-11 (Hexachlorophene)

AVADERMA DRY SKIN SOAP
Contains milk solids and lanolin for extra mildness.

LIGHTFOOT SCHULTZ COMPANY
380 MADISON AVE., NEW YORK 17, N. Y.
Send trial sample and information on the following:

TREET ☐ COMMODORE ☐ PLAIN CUT ☐

"24 HOUR" DEODORANT SOAP ☐

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Firm .....

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City ..... Zone ..... State .....

WHAT'S NEW
IN
NATIONAL SAFETY COUNCIL SERVICES *

Using charts and other training aids, George MacDonald, senior engineer, industrial department, points out electrical hazards to members of a recent class.

Safety Training Institute

In eight short years, the Council's "Safety Training Institute" has grown from a "let's try it out" experiment to a "standing room only" success. Many member companies think of the Institute as the first step in their training of new safety personnel, and send representatives year after year.

Though the course is particularly valuable for newcomers to accident prevention work, it offers the experienced man a stimulating opportunity to view his activities — to re-evaluate some of the things he's known, pick up new ideas and talk over some specific problems with instructors and other class members. Fully half of the more than 1,500 graduates have had two or more years experience before attending. Their job titles have ranged from foreman to vice-president for industrial relations.

In recent years the demand for enrollment has exceeded the supply. Each of the six 5-day classes scheduled for 1955 is limited to 32 students — and they are usually filled to capacity shortly after the mailing of the annual announcement is made.

The aim of the course is not to turn out "five-day wonders," but to give practicing safety men a broad view of the whole job, an understanding of the principles of industrial accident prevention and practical help for their day-to-day operations.

Here are the dates of the "Fundamentals of Industrial Safety" courses to be held during 1955.

February 14-18
March 14-18
May 16-20
June 6-10
November 14-18
December 5-9

The one-week course for qualified safety men, "Safety Management Techniques," will be given January 24-28 and April 18-22.

Floyd Van Atta, Council industrial hygienist, demonstrates radiant heat effects to students G. L. Barnes and M. M. Miller, area safetymen, United Air Lines.

Operation Safety

The November Operation Safety leaflet sounds a warning that should be heeded by every motorist. That warning is: "Now's the Time to Watch Out for Walkers!"

Pedestrian injuries and deaths form a large part of traffic casualties annually (last year's toll: 8,600 deaths, 165,000 injuries).

One good way to cut down on the casualties in your plant is to make sure the motorists in your own organization give walkers a break. November is a good month to stress this type of driver education, and the November Operation Safety leaflet will help you do the job.

The leaflet takes the humorous approach. Its front cover features a cartoon-type illustration, the center spread consists of a large picture and two lines of copy, and the back cover carries six important rules for motorists to observe.

This leaflet is part of the November Operation Safety program. There are many other items in the November kit that will be of help to you in a plant-wide pedestrian campaign—such items as an editorial and news stories you can run in your plant publication and information on posters, newspaper mats, and film trailers you can use in this educational effort.

For prices and complete information on leaflets or any other Operation Safety item, write: Operation Safety, National Safety Council, 425 N. Michigan Avenue, Chicago 11, Illinois.

* Look to this page each month for latest news about NSC services. Address requests for additional information, samples or prices to the Membership Department.

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the greatest development in soling material for industrial footwear

NEO SUPREME

SUPER
acid resistant

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heat resistant

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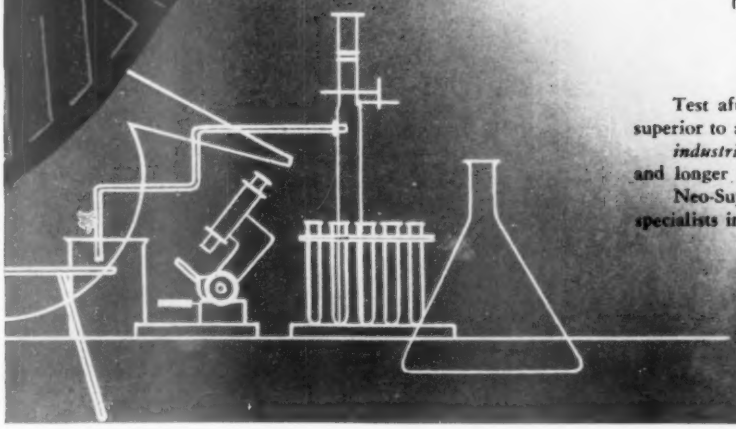
(low temperature flex)



Test after test shows Neo-Supreme to be far superior to all other materials so far developed for *extreme industrial applications.* For greater comfort, safety and longer wear under *extreme wear conditions,* insist on Neo-Supreme. It's another first by Gro-Cord — specialists in work and industrial soling materials.

GRO-CORD RUBBER CO.
LIMA, OHIO

Canadian Plant
GRO-CORD RUBBER CO. of CANADA LTD.
Tillsonburg, Ontario

For a Successful Poster Program

JUMBO POSTER for NOVEMBER 1954

The Jumbo poster, issued monthly, is designed for outdoor use and is available to members on annual subscription but is not stocked. Its actual size is 9' 11" by 11' 8".

NATIONAL SAFETY COUNCIL

0228-A **8½ x 11½**

This new four color poster is illustrative of the 72 four color posters shown in the 1954 Poster Directory.

NATIONAL SAFETY COUNCIL

0322-C **25 x 38**

Above new "C" poster, issued monthly, is indicative of the other two color posters—shown in one color on the following pages and in the 1954 Poster Directory.

TOUCHDOWN!

You can score better in your program with timely, colorful posters.

A variety of subjects will attract — and hold — employee attention.

A wide selection of subjects is as close as your copy of the 1954 Directory of Occupational Safety Posters. ***It contains miniatures of 744 posters—topnotch selections on a great variety of subjects.*** Additional copies are available at 50 cents each —write to Membership Dept., National Safety Council.

Posters miniatured on this and the following pages are NEW. Excepting the Jumbo poster (left, upper), all will be in stock throughout 1954. Those posters shown in one color on the following two pages are actually printed in two or more colors.

For a more successful poster program: first make your selections from the brand new posters shown on these pages ***and then*** from the hundreds of illustrations in the 1954 Directory.

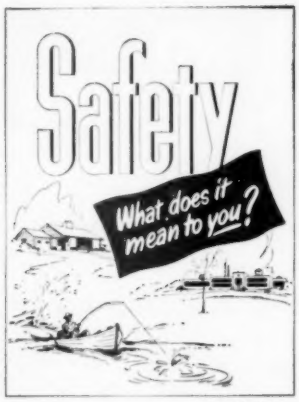
Electrotypes of poster miniatures on this page are not available, nor can payroll inserts be supplied.

Posters below are printed in two or more colors

(Available only in sizes indicated)

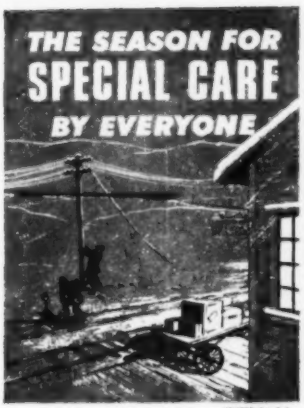
NATIONAL SAFETY COUNCIL

0304-A **8½x11½**



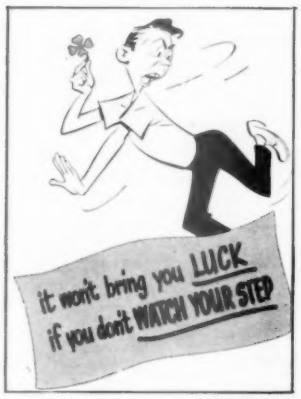
NATIONAL SAFETY COUNCIL

0275-B **17x23**



NATIONAL SAFETY COUNCIL

0298-B **17x23**



NATIONAL SAFETY COUNCIL

0254-A **8½x11½**

NATIONAL SAFETY COUNCIL

0252-A **8½x11½**

NATIONAL SAFETY COUNCIL

0269-A **8½x11½**

NATIONAL SAFETY COUNCIL

0234-A **8½x11½**

NATIONAL SAFETY COUNCIL

0301-A **8½x11½**

NATIONAL SAFETY COUNCIL

0274-B **17x23**

Electrotypes of payroll inserts can be furnished in all poster illustrations shown above.

Posters below are printed in two or more colors

(Available only in sizes indicated)

NATIONAL SAFETY COUNCIL

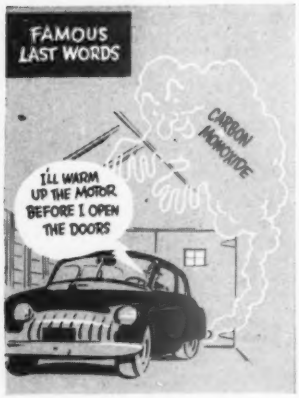
0277-A 8½x11½

NATIONAL SAFETY COUNCIL

0302-A 8½x11½

NATIONAL SAFETY COUNCIL

0292-A 8½x11½



NATIONAL SAFETY COUNCIL

0300-A 8½x11½

NATIONAL SAFETY COUNCIL

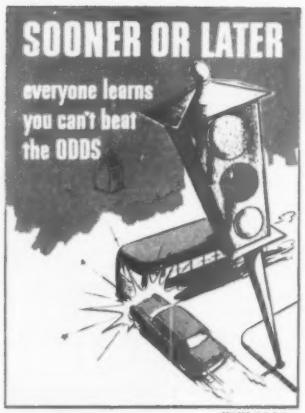
T-0303-B 17x23

NATIONAL SAFETY COUNCIL

V-0289-B 17x23

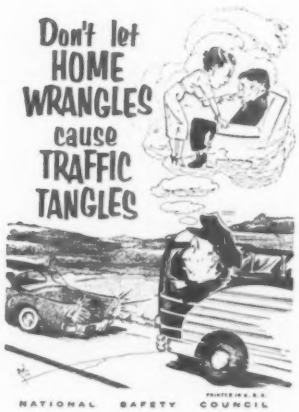
NATIONAL SAFETY COUNCIL

V-0290-B 17x23



NATIONAL SAFETY COUNCIL

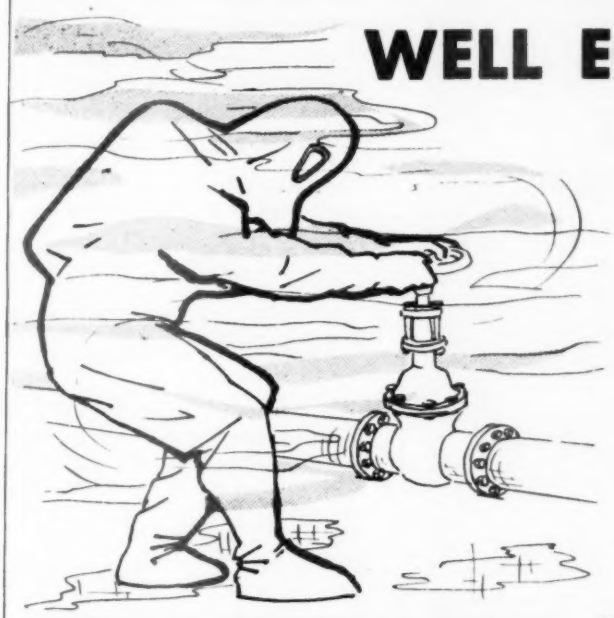
V-0288-B 17x23



NATIONAL SAFETY COUNCIL

V-0291-B 17x23

Electrotypes of payroll inserts can be furnished in all poster illustrations shown above.



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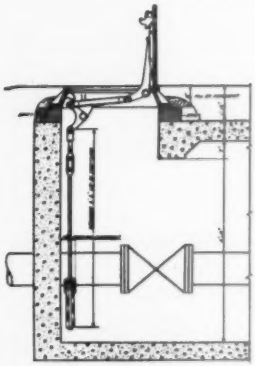

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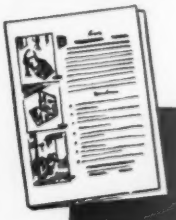

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Seeing Eyes

—From page 195

Another example is the Fulton Bag & Cotton Mills where the following information was obtained:

Efficiency. Visually equipped workers average 22% more efficient.

Earnings. 80% of sewing machine operators with best vision had best earnings.

Gain in Earnings. Those operators receiving eye care had greater earnings 10.6 to 5.6%.

Accidents. Workers with poor vision had twice as many accidents 39 to 17.

Attendance. Workers with good vision had 20% better record.

This brings to mind the practice of many safety engineers, personnel directors and plant physicians who refer employees out for examination to their own optometrists with this statement, "Get a copy of your prescription and we'll get you a pair of safety glasses." This is poor procedure for many reasons. First, it pre-supposes that the present Rx of the employee is adequate for the job he must perform and which might have been prescribed for another job with different visual requirements. Particularly is this true of bifocal cases.

Second, asking the employee to obtain a copy of his Rx from his eye-man leads him to believe that he can obtain this service for nothing, and when his doctor charges him for this service, there is sometimes some unpleasantness and misunderstanding. Costs of time of the doctor, filing, assistant's time, record keeping and other overhead are no different in an eye-man's office than in industry and must be paid for by someone.

Third, the elapsed time between examinations often is greater than the employee remembers. Glasses prescribed five, ten or 15 years ago often are totally inadequate for the task at hand. Incidentally, the average time in the United States between eye examinations is about six years. The large majority of cases show that their personal glasses were prescribed for the reading distance of 14 to 16 inches, but we have found that the work to be performed on the job was at 28 or 30 inches.

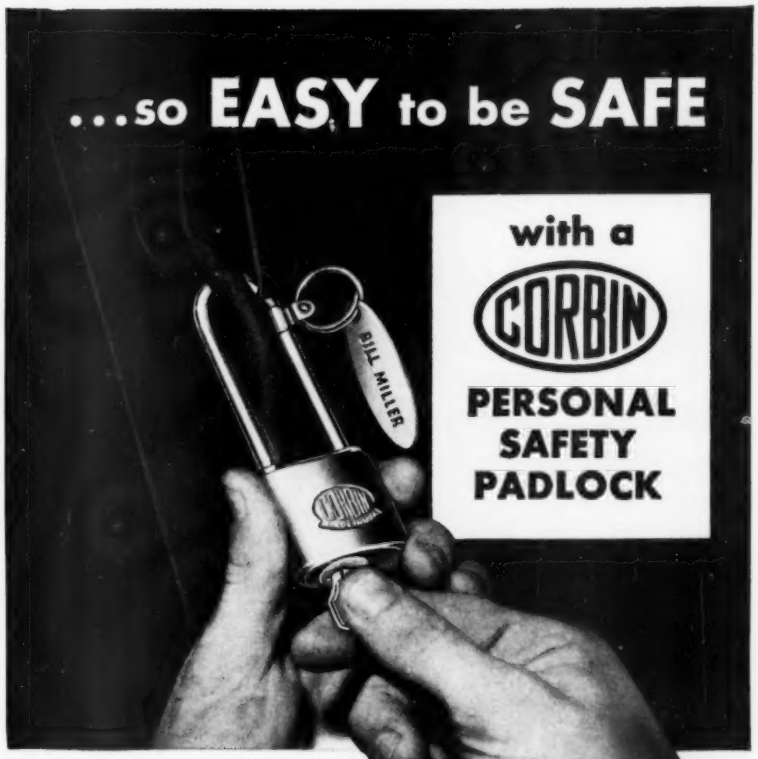
Another practice which the profession does not favor is one which

the employee is told to consult one particular eye-man at his own expense by the safety engineer, plant physician, nurse or personnel director. This is poor practice and may lead to grievances. Free choice of practitioner must be upheld. We have not yet reached the stage where industry or the state can regulate employees' actions in this respect. If you pay the bill, on the other hand, you have the right to ask him to select the eye-man, but for opinion only. The employee still must be given free choice for whatever treatment or correction he needs from his own doctor.

There is no hard or fast rule for the provision of eye services to industries. Each plant has distinct and separate problems. In one, the problem might be the necessity of the employee to have sharp and distinct vision at a specific distance. In another, the need of good color vision might be a requisite. One job may demand two-eyed vision with a high degree of depth perception, and another may be filled by a one-eyed man with no depth perception. And in still another, a blind man may be adequate. Only an eye-man can determine the required visual skills and capabilities with any degree of accuracy.

Insistance on 20/20 vision at distance in each eye is a thoughtless, and expensive procedure. One plant I know of has this requirement; but on personal observation most of the jobs were at 16 to 20 inches in fine assembly work. A near-sighted person with a wide field of vision plus a good color sense would have been better suited for the job than one equipped with far-sighted vision.

At another plant where the job required near-sighted vision with the help of visual aids, the physical examination demanded 20/20 in distance visual acuity. The work was performed by young girls and the observation was made that the turnover in the department was very high, and that most of the girls required glasses after a few months on the job. It was little wonder. Not only was the work arduous from a visual standpoint, but the working conditions were poor. —*Page 205*



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Disc tumbler mechanism has 200 regular key changes and 700 possible changes when so required. Corbin P65R Padlocks can be keyed alike or master-keyed. We will gladly help you work out a *Personal-Safety* system based on your specific needs. For further information without obligation, write to:

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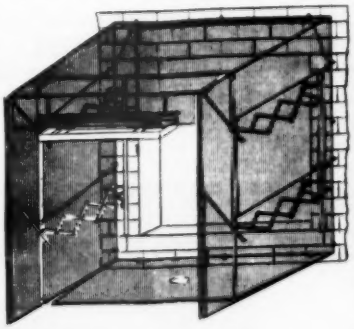

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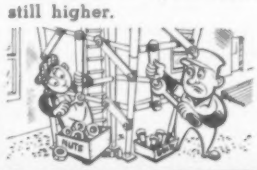

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A successful vision program, like any other industrial program, be it medical or engineering, must be conducted by trained personnel. Any problem relating to vision, safety, conservation of vision, visual performance at the job, comprise the work of a trained eye-man.

Coordination of the eye man's work with all other departments in modern industry contribute to good operation of the plant resulting in savings to both management and labor.

BIBLIOGRAPHY

John R. Wittekind, O.D., Proceedings of Conferences on Occupational Vision, Rutgers University, 1951-52.

Hedwig S. Kuhn, M.D., and John M. Roche, "How Industry Protects the Workers' Eyes," National Safety Council.

John R. Wittekind, O.D., "Eyes, the Work, and the Worker," New York Safety Council Lecture.

Henry B. Peters, O.D., Lecture, Conference on Occupational Vision, Rutgers University, 1951.

Elmer Westland, O D., A.O.A., Chairman, Occupational Vision Committee Reports.

Cases for Comment

—*From page 154*

were taken and it was subsequently determined that surgery to the knee would be required. The injured lost 46 days from work.

The company feels that the disability in question parallels the horseplay accidents cited in example (a) Section 2.4 of the ASA Code Z16.1-1945.

DECISION: The injury should be included as a temporary total disability. The committee noted that horseplay was involved, but came to the conclusion that the injury to this employee's knee was from his activity of getting out of the truck cab. They believed that this was part of his regular operations

ON OILY AND GREASY FLOORS

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COSTLY SLIPPING ACCIDENTS

USE Tamms FULLER'S EARTH

Adds greatly to the safety of your shop • Provides safe non-slip footing • Absorbs oil and grease • Lessens fire hazard because, unlike saw dust or wood shavings, it is non-inflammable • Every shop needs this low cost safety aid.

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NO SLIPPAGE with a NEWCO Wire Rope CLAMP!

Holding Efficiency 95% to 100% of Catalog List: Simple to Install

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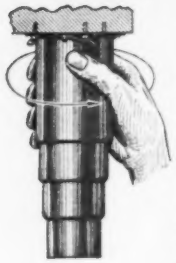

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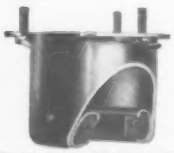

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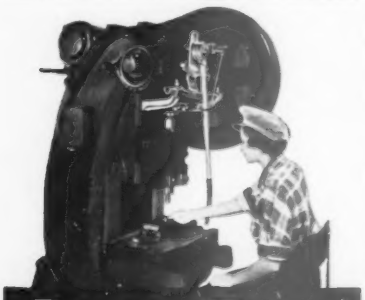

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and that the injury, therefore, arose out of and in the course of his employment.

* * *

COMMENT: *Was the parking of the truck so close to the pole trailer such that it constituted an unsafe practice? Is a limited amount of horseplay permissible on the job or should all of it be prohibited? It seems that we had here a combination of several factors causing the injury. The yard truck was improperly parked, the foreman did not exercise control over the men, there was horseplay, the employee lost his temper and did not exercise good judgment.*

These are typical, every day weaknesses which must be controlled to provide effective accident prevention effort. Here we had an unsafe act, an unsafe condition, and ineffective supervision.

Misrepresentatjon

An employee was recently assigned to a job, along with a coworker, of raising one end of a load of approximately 200 pounds from a lying-down position to an upright position. This was accomplished by both employees grasping the sides of the load and standing it up together. The employee had been working on the assignment for approximately nine days when he complained to his foreman that he had strained his back. He was referred to the plant dispensary and was placed in the company hospital for treatment.

On investigation it developed that this employee had received a back injury in 1937 in an automobile accident. He received extensive treatment from his family physician and was advised to wear a back brace when lifting. This person filled out an application for employment in 1951, at which time he left unanswered a question concerning physical defects or chronic diseases. On his medical record he denied having any physical impairment. He was subsequently employed and given a classification which qualified him for any type of work within the plant.

Did the fact that this person misrepresented on his pre-em-

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ployment physical affect the chargeability of this injury?

DECISION: This injury should be included. There was apparently no question that this employee received a back injury or that his back condition was aggravated by his employment. Neither a statement or lack of statement on the application for employment would affect the reportability of the injury.

* * *

COMMENT: *Could a more complete pre-employment physical examination have discovered this weakness? Should the personnel department have checked further into the reason why the man had not filled in, on his application for employment, the question concerning physical defects or chronic diseases? Was the best method for doing this job being followed, since 200 pounds were being handled manually? A job safety analysis might be in order.*

Distinguished Service

—*From page 139*

Stanolind Oil & Gas Co., Tulsa, Okla. All drilling.

Sun Oil Co., Dallas, Texas. All wholesale and retail marketing.

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the NEW SANITARY WAY

1. Step On
2. Mark Time
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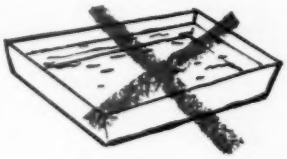
That's all!

Don't Spread It

with old fashioned methods of foot sanitation



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The SANI-MIST method is simple, inviting and effective—the most sanitary method yet developed for protection against Athlete's Foot. The SANI-MISTER dispenses a refreshing, full strength treatment from a sealed tank every time. No chance for dilution, contamination or reuse of the solution, as in common foot baths or foot pads.

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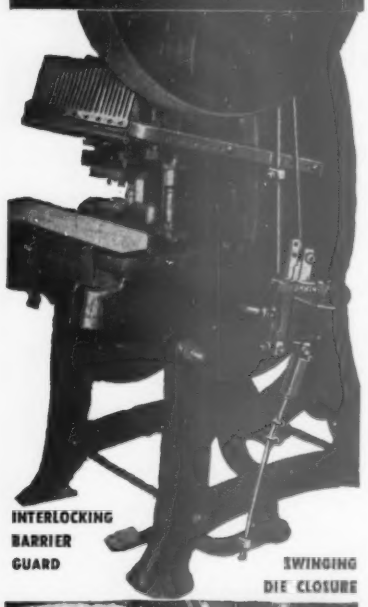

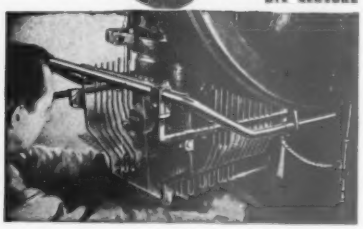

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What's in That Cylinder?

—From page 125

must also be noted that shades of color vary considerably under different kinds of light, such as mercury vapor and fluorescent lights.

Use of color on cylinders certainly has its place, for it is essential to good housekeeping. It is felt, however, that color should only be used for *secondary* purposes, such as segregation, or for ownership identification. It should not be used as a *primary* method for content identification.

There always has to be an exception to the rule, so there is one instance where color is utilized for selective purposes with the concurrence of the compressed gas industry. Medical gas producers and users have subscribed to the practice of applying a color area to the shoulder of small medical gas cylinders used exclusively for anesthetic purposes.

This practice is described in Simplified Practice Recommendation R 176-41, *Color Marking for Anesthetic Gas Cylinders* published by the U. S. Department of Commerce. The recommendation applies only to medical gas cylinders which approximate 4-½ in. diameter by 26 in. long, and to only 8 gases or mixtures of gases.

All medical gas cylinders are marked or labeled for identification of material contained as a requirement of the Federal Food and Drug Act. This fulfills the requirements of *American Standard Z48.1—1954* for the use of legend as the most satisfactory means and primary means for identification of cylinder content. The application of color to the shoulder of these medical gas cylinders is therefore secondary.

In companies where a variety of gases are produced it is customary for each to have a color coding system of its own. But such color coding is used for segregation purposes, for facilitating storage, for container ownership identification, and for plain good housekeeping and maintenance practices. This appears to be the proper place and logical use for colors on compressed gas containers.

Now, how can the gas user help to overcome the occasional complaint that gas cylinders are not marked satisfactorily to identify their content? A simple and effective way to remind the gas supplier of such negligence is to refuse to accept delivery of cylinders of gases unless they are clearly and legibly marked with the name or trade name of the gas contained. The gas supplier is the fellow to talk to about it, and he will willingly cooperate. He has a sincere desire to have his products utilized safely.

American Standard Method of Marking Portable Compressed Gas Containers to Identify the Material Contained, Z48.1-1954, may be obtained from the American Standards Association, 70 East 45 Street, New York 17.

Politics makes strange bedfellows, but they soon get accustomed to the same bunk.

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PROTECT WORKERS FROM INJURY

This fan guard prevents hand, arm and head injuries. Made of a mesh fabric, it is washable, mildewproof and won't interfere with the normal flow of air and is non-static.

Cover protects back and sides of fan as well as the front.

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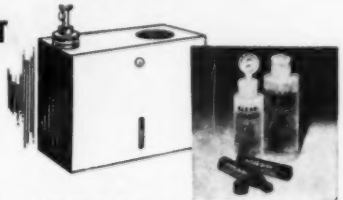

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Safety Films

Further information on publications or films listed here may be obtained from Nancy Lou Blitzen, Film Consultant, National Safety Council

Industrial Safety; Logging

Hazards of the Log Haul (16mm sound motion picture) color. 15 minutes. Production date 1954.

The film depicts many of the typical accidents that occur on a log haul in which trucks are used. Scenes show the causes of these accidents and their results in injuries and loss of production. The dramatic theme appeals for caution and safe practices in such operations.

SOURCE: Lumbermen's Safety Association, 90 Harbour Street, Toronto, Ontario, Canada. Availability basis: purchase.

Corrections

Corrections for listings in the June 1954 issue of *National Directory of Safety Films.*

The films entitled *Building Construction Safety* and *Men Who Come Back* are not available on a loan basis (c) from the Industrial Commission of Ohio (64) except in the state of Ohio. This source does have them for rental throughout the United States.

The American Transit Association (11) no longer has *Bus Operation: The Operator and Safety* available for rental or television. Delete that source from the film listing.

Films at the Congress

The National Safety Council will have a continuous film showing of all the Council's industrial safety films at the 42nd National Congress & Exposition.

These showings will run from 9:00 a.m. through 5:00 p.m. each day of the Congress except Monday, when they will start at 10:00 a.m. The showings will be held in the downstairs exhibit hall of the Conrad Hilton Hotel.

There will be scheduled showings of the Council's new films each afternoon. At other times, films will be shown on request.

The August quarterly Supplement to the *National Directory of Safety Films* is still available. For copies of this Supplement, write directly to the Council. Single copies of the Directory sell for 75c.

Safety on Six Continents

—From page 109

receives a place of honor in the home.

By shifting emphasis, in this case, to making the award aspect of the program a vitally important feature, and, at the same time, plugging away constantly on the other basic features of the program to whatever degree they will be accepted under local conditions, we succeeded in cutting frequency from 21.2 in 1945 to 1.0 in 1953.

Awards of lapel pins are made periodically in the Sao Paulo, Brazil, tire, tube and textile plants. These awards are as highly

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prized as the pins awarded in Bombay. Every six months a safety contest is held and the winners are treated to a churrasco (barbecue).

During the course of the new safety program at Sao Paulo, frequency has been reduced from 17.2 to 1.5.

Employees at the Port Elizabeth, South Africa, tire and tube plant are extremely susceptible to slogans and seem to pay more attention to them than workers in perhaps any other Firestone plant. For that reason slogan contests are frequently held and a new slogan is posted every week.

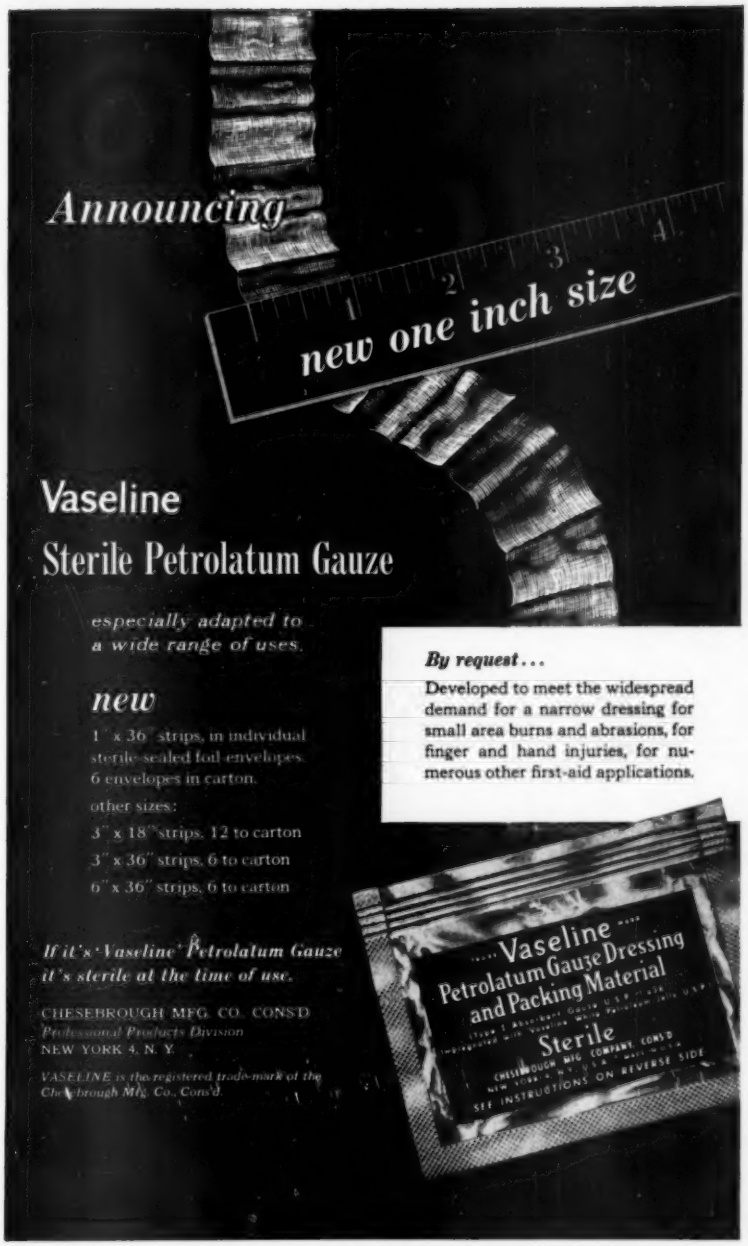
The Firestone plant in Port Elizabeth has joined with automobile and other tire manufacturers for periodic interchanges of safety problems and information. This is helpful not only because of the knowledge gained but also because a spirit of competition among the manufacturers has been fostered—a very desirable element in a safety program.

Port Elizabeth's frequency rate in 1945 was abnormally high, 90.5, due in great part to poor control of accident claims. This factor was present to some extent in other plants. But with the institution of proper controls, the South African plant's frequency was reduced in one year to 21.7 and today stands at 1.9.

The relatively small plant at Christchurch, New Zealand, manufacturing tires and tubes, has not had a lost-time accident since April 1951 to the time of this writing. Limericks hold an important spot in their program, more important perhaps than in any other Firestone plant.

A double-barrelled limerick contest is run every month, and the National Safety Council's contest is used as the basis for it. Employees supply the fifth line to the four written by NSC and winners are judged and prizes awarded by the plant. Then all completed limericks are forwarded to the NSC thus giving each contestant two chances to win a prize.

The safety program at the tire, tube and industrial rubber products plant in Brentford, England, follows closely the pattern in the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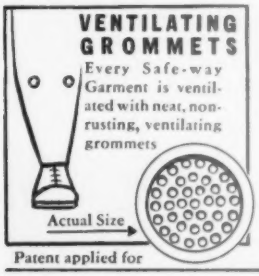

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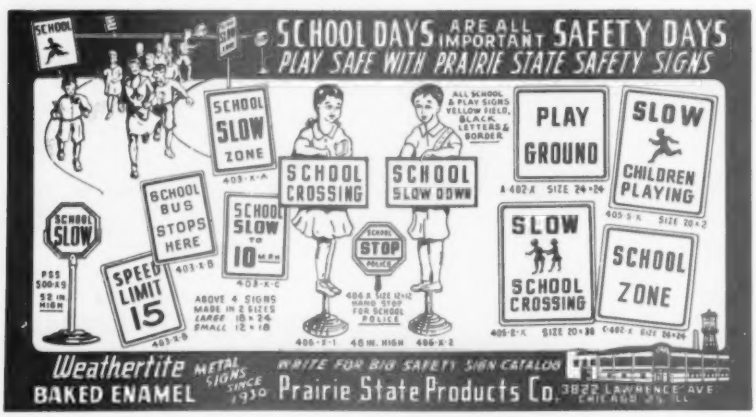
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United States. In Brentford severity was reduced from 12.0 in 1945 to 1.3 in 1953.

Similar reductions have been made in all our foreign plants, and these have been brought about through rigid insistence on safety fundamentals and a willingness to shift emphasis on non-basic factors to meet local conditions. In so doing we have, since 1945, reduced the over-all frequency rate of 86 per cent and the severity rate 65 per cent. In our foreign plants frequency was cut 93 per cent and severity 52 per cent.

These reductions could not have been effected unless top management—everyone from the Chairman, Harvey S. Firestone, Jr., on down—had given the safety program full support and leadership. Much credit must also be given to Glen D. Cross, safety director for the Company, and the safety men in each plant who carry out their duties with a great sense of dedication.

But as important as these factors are—and they are tremendously important—our safety program would long ago have fizzled out if local supervision and the employees themselves had not given their program their enthusiasm and complete support.

It is they—supervision and employees—who do the job day in and day out. And it, therefore, is to them that the lion's share of the credit inevitably must go for the success of the program in the past and for its effective continuation in the future.

The Land Divided

—From page 168

tures, sprinkled with quick tempers and manana fever, was the language differences — predominately Spanish.

It was found that the previously tried and true safety methods used by industry in the States would in general work here—it would just take longer.

Safety in Operation

One of the first orders of business was the formation of safety committees, both supervisory and worker. The worker committees

were composed of natives, who were trained to conduct their own safety meetings, and with rotating membership, we continuously increased the number of employees exposed to the fundamentals of safety and the development of safety consciousness.

A month *Safety Zone* magazine was introduced for English-speaking employees to provide safety instruction and report progress by divisions. English posters were translated for Spanish-speaking workers.

An accident report form for accident prevention purposes was devised and submitted to the supervisory safety committees for their suggestions and approval before adoption. This resulted in complete acceptance of the new form and more effective reporting than otherwise could have been expected if such a report had been arbitrarily forced upon our supervisory personnel.

Services provided by the National Safety Council were subscribed to, and calendar year statistics were submitted annually for their use in compiling national averages and comparison with other organizations.

Divisional safety regulations were prepared and promulgated in pamphlet form for the operating divisions. Safety regulations pertinent to the entire organization were issued as circular letters.

Various methods of competition between units were tried, with considerable debate and opposition, due to the wide variety of activities involved. The final solution was each unit competing with its own previous record. The goal —each year better than the previous one. We deliberately did not go for "a percentage improvement." We were willing to settle for improvement—period. There was still lots of opposition and not a few pessimists who insisted "it couldn't be done, with the type of labor we have."

A bilingual safety manual of advice and instruction—not rules and regulations—was published and distributed to the native workers. Each page was illustrated with some of the illustra-

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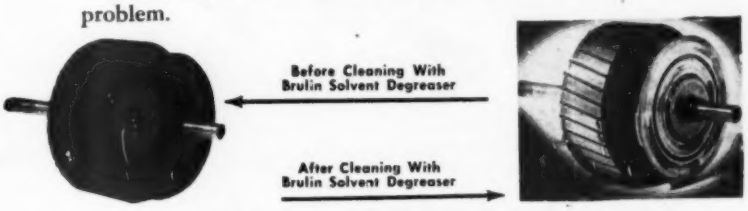

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tions being done by a native safety committeeman. Another assisted with the translation since it was found that the average Spanish-speaking worker didn't understand the official translator's translation.

Naturally these projects were in conjunction with the usual regular inspections and investigations of serious accidents, of which there were far too many.

During the first five-year period of our Safety program, 1940 through 1944, the average working force jumped to a high of 37,236 for an average of 30,022. Our accident frequency rate was reduced to 35 by 1944, a 68 per cent improvement, and the fatality rate dropped to .67 per thousand, or one fatality for every 1,486 employees per year.

This means that with a 91 per cent increase in force, we experienced a 21 per cent decrease in fatality rate over the first 25 years of operation and maintenance. This reduction in fatality rate was equivalent to 27 lives which would have been lost during this five-year period at the rate prevailing during the previous 25 years.

Our improvement flattened out in 1944 and after a good hard look at the situation, having learned some things ourselves, it was proposed that we reorganize our safety program by adopting a decentralized program and establishing a Safety Board.

This proposal was approved and effective January 17, 1945, a Governor's circular was issued pointing out the necessity for enlarging and placing more emphasis upon the accident prevention program in general, and outlining a minimum standard to be followed in setting up a more comprehensive safety program.

Each department and division head was directed to establish

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within his respective unit a safety organization and to designate a safety representative to represent, but not relieve him of responsibility, on all safety matters within his jurisdiction.

These safety representatives, together with the safety engineer, constituted the new Safety Board, with the representative of the engineer of maintenance as chairman and the safety engineer as secretary. The purpose of this board, as prescribed by the Governor, was to meet at least monthly to review progress, make recommendations, adopt corrective measures, and formulate and promulgate safety policies.

Each unit head, subject to approval of the Governor, was directed to employ or appoint one or more full-time or part-time safety assistants, responsible for handling safety matters under the direction of the safety representative.

Under this plan the principal duties of the Safety Section became those of an advisory and supervisory nature in developing and improving the safety engineering program for the organization as a whole, including the coordination of occupational health, sanitation and fire prevention activities with the over-all accident prevention program.

Under the Canal reorganization of 1950 the Safety Section was established as the Safety Branch of the Panama Canal Company, under the supervision of a chief, responsible under general direction of the Lieutenant Governor-Vice President, for formulating, supervising and promoting safety measures in all units of the Canal Zone Government and the Panama Canal Company on the Isthmus and for developing and improving the programs of accident prevention for these organizations. The chief of the Safety Branch

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was also made chairman of the Safety Board.

These functions and responsibilities were further emphasized by the Federal Employees' Compensation Act, as amended in October 1949.

The monthly *Safety Zone* magazine was discontinued and replaced with a page in *The Panama Canal Review*, official Panama Canal Company publication. For the English-speaking employee this presents comparative statistics, progress of program, recognition of outstanding accomplishments and other safety information and instruction.

A small Spanish supplement to the previous *Safety Zone* is published monthly, primarily for educational purposes, in presenting safe practices. This pamphlet is well illustrated, showing local conditions, both right and wrong, to create and maintain interest.

With competition restricted to operations units, monthly Honor Roll awards are presented to the bureau having the lowest frequency rate and to the divisions completing the month with no disabling injuries.

Subsequent to the incorporation of Canal operations in July 1951 all existing safety circulars were revised and reissued in two parts. Those outlining safety policy and organization were reissued as an executive regulation. Those having to do with procedures were reissued as a pocket-sized manual with both English and Spanish editions being printed.

Safety Regulations

Our safety regulations are comparatively brief considering our size and variety of operations, as compared to other organizations. It is our feeling that a few rules, properly emphasized and enforced, are more effective than voluminous rules, which look good in the archives, but which generally are unknown to both workman and supervisor and otherwise ignored. We are striving to integrate safe practices with operating procedures, rather than to set up safe practices as something added.

Safety Board

As required by the revision of Safety Policy and Organization promulgated by Executive Regulation, the Canal Zone Government-Panama Canal Company Safety Board was reorganized in 1953. The Safety Board is now composed of the Chief, Safety Branch, as chairman; a recorder designated by the executive secretary; and safety representatives for all bureau directors.

Each safety representative, who is either a safety engineer, safety inspector, or part-time safety assistant engaged on operational safety duties (except in the cases of the Health Bureau, Personnel Bureau and Office of the Comptroller), is responsible directly to his Bureau Director and represents him on the Board. Regular monthly meetings are continued.

Last year the Governor-President approved a new award plan, consisting of a permanent annual safety trophy to be awarded to the employees of the bureau achiev-

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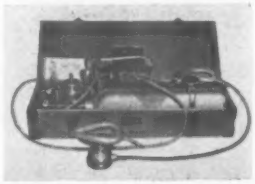

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ing the highest percentage improvement in accident frequency rate over their own previous three-year average. A new trophy will be presented each year to the winner and it will be known as the *Governor-President Annual Safety Trophy.* Our Health Bureau was the first winner of this trophy with a 54 per cent improvement in their frequency rate last year.

Our entire organization qualified for its first National Safety Council Award last year. An Award of Merit has been received for our percentage improvement over par of 23 per cent for frequency rate and 26 per cent for severity rate. In addition, the Health Bureau, first winner of our Governor-President Annual Safety Trophy, the Terminals Division and Maintenance Division, also have received Awards of Merit for their 1953 record.

A review of our past nine years experience, under the decentralized program, reveals that with an average force of 22,915 our fatality rate has dropped to .17 per thousand, or one fatality for every 5,729 employees.

Comparing this period with the first 25 years of operation (with no organized safety program) gives us a 46 per cent increase in force, and an 80 per cent decrease in the fatality rate. The frequency rate for 1953 was 11 or a 69 per cent improvement over that prevailing during 1944, the last year of our centralized program.

Table II shows comparable statistics for our safety era.

We feel that the real important result of our 14 year safety program is the saving of life, as revealed by the reduction in fatality rate. This reduction is equivalent to 166 lives that would have been lost had the fatality rate continued at the same rate experienced during the first 25 years of operation and maintenance. This figure is based entirely upon the the fatality rate per 1,000 employees, in order to provide a fair comparison during periods in which great fluctuations in size of force occurred.

We are not satisfied with our present record and frequency rate

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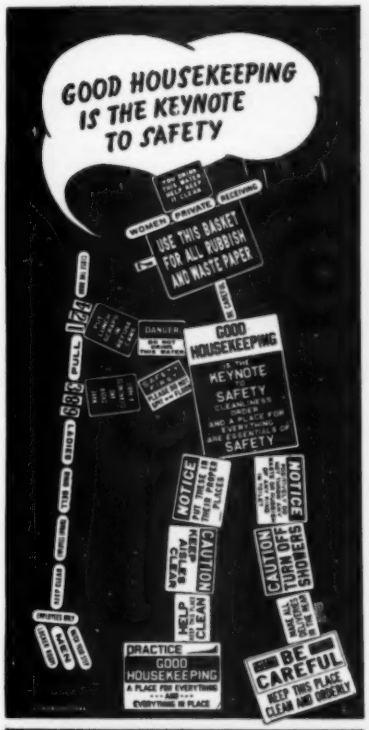
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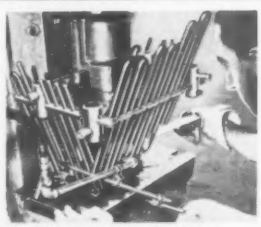

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of 11, but we had so far to travel, and in the tropics it does take a little longer. However, we do believe we are headed in the right direction, and in time we expect to catch up with some of the progressive Statesiders. We now have management and supervision on our side.

Accident Syndrome

—From page 117

pattern, having a known though varied etiology, distinctive prodromal signs, symptoms and circumstances and are thus frequently unpredictable.

As construed in this article, an accident, with or without injury, is a sudden, unplanned and uncontrolled morbid phenomenon resulting from the integration of dynamic, environmental and temporal factors. Chance occurrences are specifically excluded and consideration is limited to the 80 or 90 per cent of the accidents which are generally attributed to personality factors.

The more important and pertinent findings which have led to the foregoing conclusions may be summarized as follows:

1. Accidents are essentially an affliction of youth.

Of the non-industrial accidents, 50 per cent occurred before the age of 25, and 70 per cent before the age of 35. In both the industrial and the non-industrial series, the accident rate at the age of 20-24 was 2.5 times higher than at 40-44, four times higher than at 50-54, and nine times higher than at 60-64.

Studies of yearly age groups showed that the period of highest incidence of accidents begins at the age of 17 years, reaches a peak at 21, and is virtually over at 28. In children, the ages of 2-4 and 8 are relative peak years, while age 11 (13 for girls) has the lowest incidence of accidents.

These and similar findings in the literature indicate that the tendency to have accidents, is largely, a phenomenon that passes with age, decreasing steadily after reaching a peak at the age of 20-24.

2. Males have a significantly higher incidence of accidents than females.

This is true for every single year of the normal life span, except the

first, and in every type of activity, except the handling of household objects. The incidence of accidents in males and females was consistently in the ratio of 2.1 in numerous samples of the non-industrial series, and was even higher in comparable studies of the industrial series.

3. Most accidents (74 per cent) are due to relatively infrequent solitary experiences of large numbers of individuals (86 per cent).

These percentages were identical for the industrial as well as the non-industrial series, and remained constant in nearly every year of a twenty-year period. Those who suffered injuries each year, over a period of three consecutive years (3-5 per cent), accounted for a relatively small percentage of all the non-industrial accidents (0.5 per cent).

4. Irresponsible and maladjusted individuals have a significantly higher incidence of accidents than responsible and normally adjusted individuals.

The age and sex distribution of both groups of patients was practically identical except in the case of repeated accidents. In the maladjusted-irresponsible group, repeated accidents reached a high peak of incidence at the very early age of 5-9 years and then decreased rapidly with age; while in the normally adjusted-responsible group, repeated accidents remained at a low and even rate until the age of 50 and then decreased steadily with increment in age.

5. Incidence of accidents follows a relatively fixed annual cyclical pattern of distribution.

Accident occurrence increases steadily from a low in February to a high in June and August and then decreases steadily to the low.

Children under 15 years have a nearly perfect cyclical pattern of distribution of accidents and a wide range of difference between the high of summer and the low of winter. Both of these decrease steadily with increment in age. At its low in February, the incidence of accidents is identical for both sexes and all age groups.

6. Incidence of non-industrial accidents follows a relatively fixed pattern of distribution.

The incidence increases steadily from a low at 5:00 a.m. to a peak at 5:00 p.m. The peak hour for accidents and the diurnal pattern of distribution of accidents both vary with age and sex. In children under

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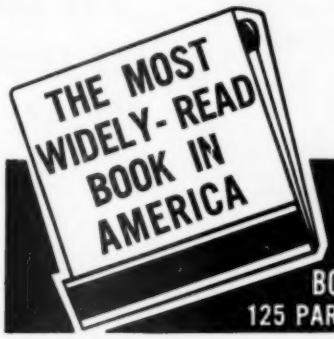

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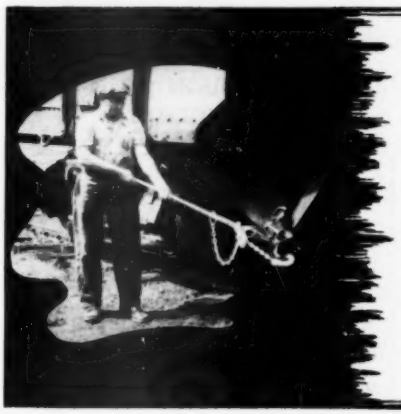

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15, the peak hour was 5:00 p.m. Between the ages of 15 and 40 it was 10-11 p.m. In those 40 and older it was 3-5 p.m. For the population as a whole, it was 3:00 p.m. for males and 5:00 p.m. for females.

With increment in age there is a steady decrease in the diurnal frequency of accidents, as well as in the range of difference between peaks and lows.

In industrial accidents, peak hours are 10:00 a.m. and 3:00 p.m. in day workers and 8:00 p.m. and 10:00 p.m. in night workers.

7. Eighty per cent of non-industrial accidents belong to one of six types.

These six types are: falls, aggressive behavior, handling objects, foreign bodies, motor vehicles, and stumbling into objects.

Falls (21.2 per cent) are the most frequent on non-industrial accidents. Next are overt aggressive acts—fights and attacks—with 17.0 per cent. In males, aggressive behavior (19.5 per cent) was the chief type, particularly between ages of 15-39, while falls (18.7 per cent) were a close second. In females, falls (25.7 per cent) were more than twice as frequent as accidents due to aggressive behavior (12.2 per cent).

In irresponsible, maladjusted individuals accidents due to aggressive behavior (23.0 per cent) were nearly twice as frequent as in well-adjusted, responsible individuals (13.9 per cent). In fatal accidents, motor vehicles and falls are the chief types or "causes."

8. Accidents often occur in chain fashion.

One accident seems to act as a sensitizing factor or as a trigger mechanism for another accident in the patient, family or co-worker. In 50 per cent of those having repeated accidents (3 or more) they occur during identical hours. This tendency increases with the number of accidents per patient.

Some persons tend to repeat accidents on certain days of the week, or month, particularly on days with special significance to the individual. There are also those who have a predilection for certain types of accident or for injury to certain parts of the body.

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The last group of observations tends to support the findings of Dunbar, Menninger and others that psychological factors play a role in the genesis of some accidents, and that some accidents may have symbolic significance to the individual. No adequate statistical studies are available as yet to indicate the relative importance of these factors.

With the aid of the foregoing findings and parts of the literature, the writer proposes that it is now possible to predict with reasonable certainty when, to whom, and under what conditions and circumstances, an accident is most likely and least likely to occur.

An accident is most likely to occur to: a young male, age 21, on a hot and humid summer day, during the months of June and July, on a week-end or a holiday, while driving a car or with aggressive behavior, during the late evening hours if not working, or during the homeward rush hour of the late afternoon and early

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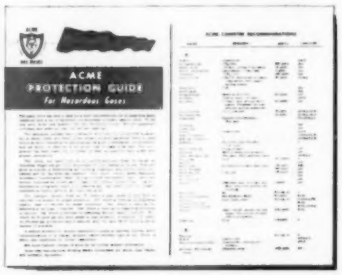

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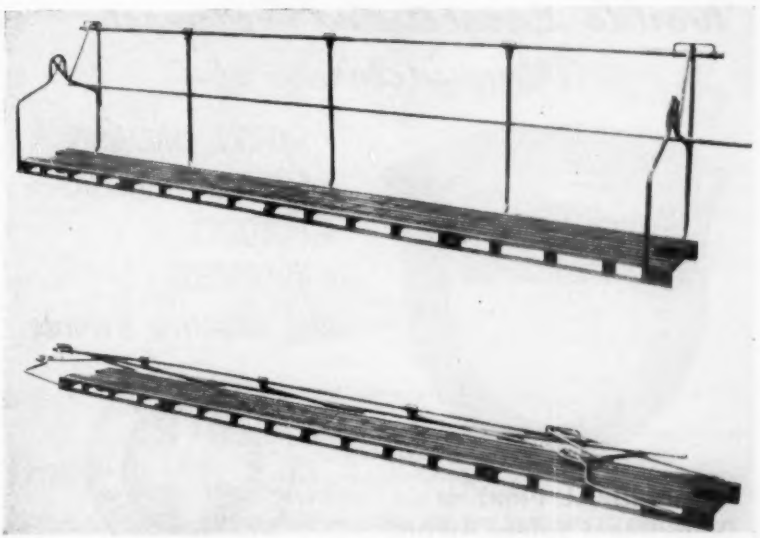

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evening, especially if these are also hours of darkness.

Likelihood of accident increases further with inexperience, with excessive speed, alcoholic indulgence, physiological or psychological fatigue, with certain specific psychological conflicts, and with the degree or intensity of such non-specific emotional factors as anxiety, hostility, frustration, and guilt.

The chances of accident are greatest if the young man is irresponsible and maladjusted, grew up in a maladjusted home, and was exposed in childhood to violence and strife, to over-authoritative parents or parent figures, to separation or loss of parents, and to accidents to himself or family.

The probability of accident also grows with any increase in the duration or intensity of exposure to environmental hazards.

An accident is least likely to occur in a healthy well-adjusted young girl, age 13, born and reared in a normal, secure and loving home, in which both parents are well adjusted and if she has not experienced or witnessed major or frequent accidents in the past.

The likelihood of an accident decreases further with the hours of night, the month of February, the midweek, the home environment and a minimal exposure to hazards. Even with increased exposure and increased physical, physiological or psychological stress or strain, an accident is relatively unlikely to occur in this type of individual.

Between these extremes there are endless possible combinations of factors, capable of yielding varying degrees of accident probability. A working familiarity with the more important factors or "causes" and with the relative significance of each factor in itself and in combination with others, should enable the physician to evaluate the probability of an accident in any given set of individuals or circumstances.

Of the several hundred accident factors mentioned in the literature, many are of minor or doubtful importance and few have been studied exhaustively or conclu-

sively. Research leading to the pin-pointing or quantitating of at least the more important factors should greatly improve the capacity or effectiveness of the physician for the diagnosis, prevention and treatment of the accident syndrome.

At present this syndrome can be diagnosed chiefly by clinical methods, on the basis of a complete history, the described signs, symptoms and circumstances, general clinical experience, an informed and critical clinical approach, and the exercise of judgment.

On the basis of experience and the evidence presented, accidents appear to be a widespread universal affliction affecting most individuals many times in the course of a lifetime. The excessive liability to accidents in youth disappears with age and in most accident repeaters, with learning, with physiological and psychological adaptation, with the development of more adequate psychological defenses, the elimination of hazardous exposure, etc.

Viewing accidents as a disease syndrome has the advantages of focusing attention on this serious and widespread condition as a clinical entity. It may serve to reorient physicians to a consideration of causes, prevention and clinical treatment of accidents per se, instead of an almost exclusive preoccupation, at the present, with only one of the sequelae or surface manifestations of accidents—the injury. While emphasizing the importance of temporal factors in accident causation, the present theory can readily accommodate all other accident-producing and predisposing factors. It has the added advantage of replacing the essentially fatalistic concept of "accident proneness" by a more hopeful theory of accident causation.

Dunbar, about a decade ago, was the first to refer to accidents as a disease syndrome; she limited the term, however, to the psycho-pathological condition known as "accident proneness." The present studies suggest that the syndrome concept has wider implications and that it can be used

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to include nearly all accidents which are not chance occurrences.

The accident syndrome may be defined as a dynamic variable constellation of signs, symptoms and circumstances which together determine or influence the occurrence of an accident. It represents a synthesis of environmental, psychological, physiological characterologic and temporal factors to form a unified theory of accident causation.

The accident syndrome may also be described schematically as a morbid condition in which the elements of (1) universal risk, (2) abnormal environment, (3) maladjustment and irresponsibility, (4) a trigger episode, and (5) behavior in the presence of the trigger episode combine to determine or influence the occurrence of an accident.

Regardless of dynamics or theories of causation, it is evident that the cruel and clock-like regularity with which, year after year, thousands of persons are killed, and injured, decidedly places this condition in the category of an endemic affliction of major proportions. It appears to this writer that the challenge which the accident problem presents should be met by a new and more aggressive approach.

The foremost need at the present time would seem to be a unified, intensive, basic research program by teams of clinicians and other workers in the related sciences. There is also an obvious need for an educational program aimed at a wider general awareness of the full scope of the menace, a broader understanding of the nature of the problem and a more hopeful outlook.

It should be stressed that an accident is basically an avoidable morbid condition; that any accident may result in death or crippling injury, and that an accident victim may need therapeutic or preventive medical aid aside from care of his injuries.

For maximum effectiveness physicians should learn to recognize the factors or forces which play a role in accident causation and treat the accident syndrome.

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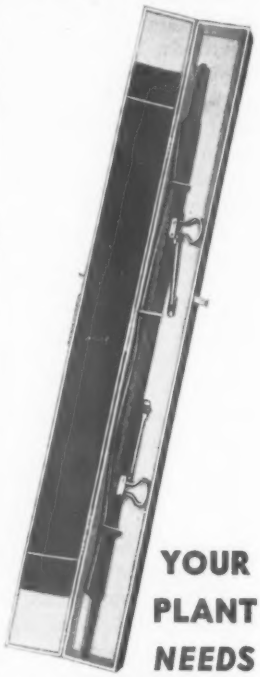

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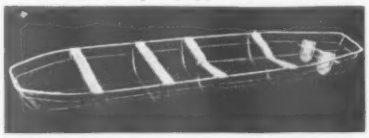

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Atomic Energy

—From page 113

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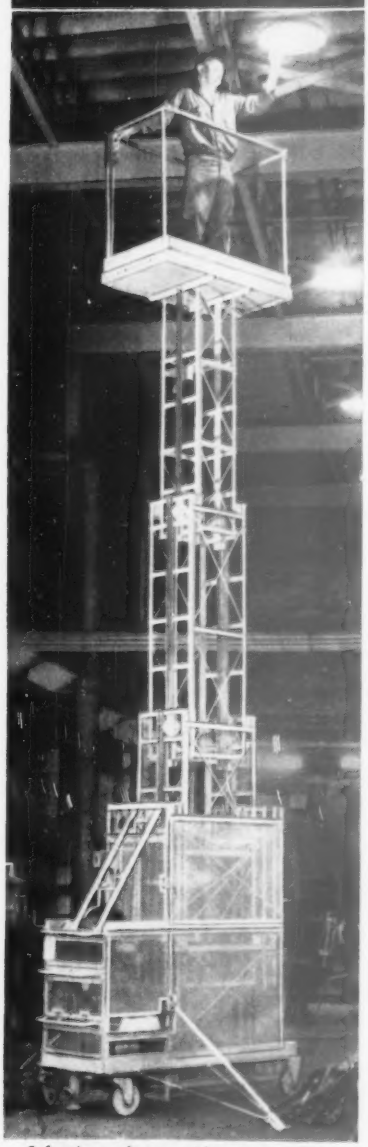

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only in that a nuclear reactor is used as a source of heat instead of a coal or oil-fired furnace.

This is important because you should realize that, for power people, all a reactor does is generate heat which can be converted into electric power. To achieve this substitution of one source of heat for another, however, is by no means as simple as it sounds. Numerous complex technical problems have been solved, but hosts of other problems of equal complexity yet remain to be solved before we can achieve competitive nuclear power for the generation of electricity.

The day of competitive nuclear power is in sight, but it is not here today. To reach this goal there will have to be invested several hundred million dollars over the next five years on research and development, and perhaps close to an additional billion dollars for construction of prototype plants and pilot models between now and 1964.

If I were to hazard a guess, and it can only be a guess at this

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stage, I would say that in less than 10 years we will be approaching the ball park and shortly thereafter, playing a fine brand of ball, perhaps not as major leaguers, but definitely with only a short waiting period to reach major status.

With this background, I will try to describe briefly the Commission's program for the development of nuclear power plant technology based on a five-way approach to the problem of attaining economically competitive power from nuclear fuels. As you know, generating large amounts of power from nuclear energy as such is no trick. This has already been achieved in the submarine thermal reactor at our reactor test station in Idaho.

But this is not economic power; it serves a purely military objective and the cost of power is not the controlling factor. However, generating nuclear power in competition with conventional fuel is another matter and it is in this area that the Commission and industry will endeavor to concentrate their attention during the

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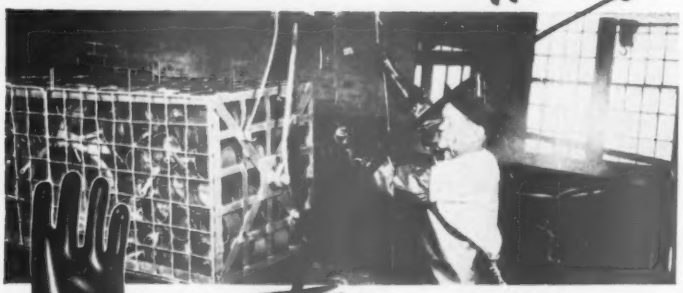

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next several years.

The first five years of the nation's reactor development program gave us what has been referred to as the first generation of reactors; the five-year program that we are discussing today should give us the second generation. We are developing these reactors in groups or generations because we do not now know enough about reactors to determine which are best.

Dr. Zinn, director of the Argonne National Laboratory, some time ago used the figure of 80 as the number of conceivable reactor designs. The reason there is such a variety of reactor types is that we have different reactor fuels, different moderators, different coolants, and we can use them for different purposes. We can't possibly carry out construction and experimentation on all of the types, so we have selected those which in the long run appear to us to be the most promising for giving us competitive nuclear power.

To be sure, I mean electric power from a nuclear reactor plant at costs which are competitive with the cost of electricity from coal and oil, for there is no point in the long term future in just generating electricity from nuclear reactors if the cost is going to be higher than from conventional sources.

The largest and only full scale reactor project, at this time, presently underway is the so-called pressurized water reactor. This reactor is being developed for the AEC by the Westinghouse Corporation, who also engineered the submarine thermal reactor for the Nautilus. The nuclear power plant will be built near Pittsburgh in cooperation with Westinghouse and the Duquesne Light Company. The cost for the research, development and construction is about 85 million dollars.

Incidentally, the Duquesne Light Company is contributing the site for this reactor, building a complete electrical generating system at no cost to the government, contributing an additional five million dollars for construction, development and research, and paying the government for steam generated. This agreement will save the gov-

ernment an estimated $30,000,000 which otherwise it would have to spend during the construction and initial operation stage.

It is not expected that this reactor will produce electric power at costs competitive with conventional fuels. The project has been undertaken to gain design and technological experience and to provide firm cost estimates for the future.

The reactor is designed to:

... Generate at least 60,000 KW of useful electric energy;
... Be light-water cooled and moderated;
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... Have a fuel element life as long as possible between chemical reprocessing;
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... Produce saturated steam at 600 psi or higher;
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... Make use of commercial standards of equipment;
... Use concrete for shielding;
... Have a minimum construction and operating coast consistent with these requirements.

The pressurized water reactor might also contribute substantially to carrying out the President's international cooperation proposal. It uses as fuel uranium slightly enriched in the isotope-235. With relatively minor redesign it would operate on natural uranium if heavy water were to be used as a coolant and moderator instead of natural water.

The sodium graphite reactor is another contender in the race for economic nuclear power. This device is being studied by North American Aviation, Inc., and will use metallic fuel elements which are either slightly-enriched uranium or a combination of thorium and uranium-233. This reactor will be cooled by liquid sodium metal and moderated by graphite.

The techniques of using liquid metals to extract the heat from reactors is comparatively new. Their advantage lies in the fact that one has more flexibility in using liquid metals than in using water because of the higher boiling point of the former and the greater efficiency with respect to heat transfer. Modern conventional power plants are able to

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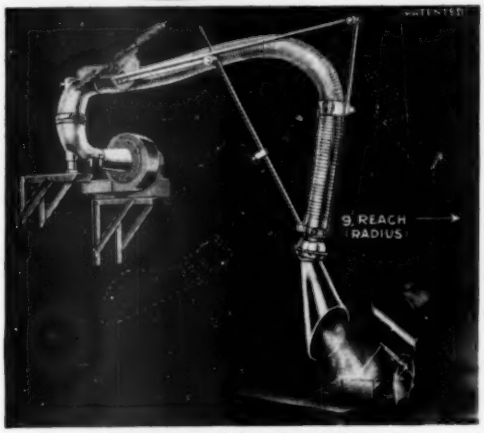

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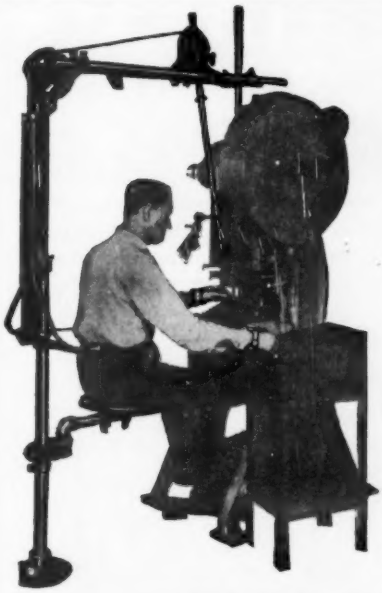

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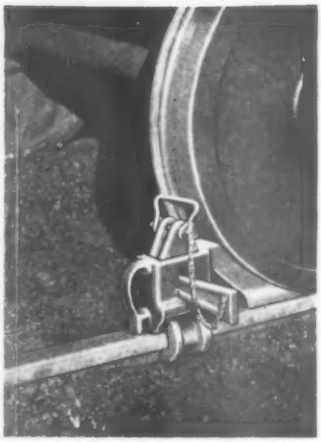

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convert about 35 per cent of heat energy into electrical energy. Liquid metal cooled reactors can be made to approach this figure.

The present conception of a sodium graphite reactor central station plant includes reactor, primary sodium power extraction system, heat exchanger, secondary sodium system, and a steam boiler. The reactor is located in a steel tank below ground level. This unit will have a heat power level of 20,000 KW, but it will not be equipped for generating electricity. The heat produced will be exhausted to the atmosphere through a relatively inexpensive sodium-to-air heat exchanger.

The next reactor with good possibilities of producing power from the atom is the so-called homogeneous reactor. Previous construction of nuclear reactors involved uranium in the form of rigid bars or shapes which had to be machined to very close tolerances and held in position within the reactor within very narrow limits. Our Oak Ridge National Laboratory has experimented for the last couple of years with putting the fissionable material in the form of a solution or a suspension in water and circulating this fluid through the core of the reactor by means of a pump.

You might say that in principal at least this is the simplest type of reactor possible because it consists simply of a pot, a pipe and a pump. The technical problems still must be worked out, particularly with respect to the effect of irradiation on the corrosion of materials and on the chemical stability of the fuel solution in which the fissionable material is dissolved or suspended, and many others. The homogeneous reactor is expected to generate 65,000 KW of heat, of which 16,000 KW will be converted to electricity. This development will bear watching.

Another interesting approach is the so-called Boiling Water Reactor being developed by the Argonne National Laboratory. Some years ago use of a reactor as the direct source of steam for the turbine was suggested as an attractive way of making power. This arrangement would eliminate the need for a heat exchanger and the

external steam boiler. It would permit measurably higher thermal efficiencies, and a considerable simplification in the construction as well as reducing the cost of pumping the coolant around the heat exchanger.

In the summer of 1953, experiments with a small temporary reactor, conducted by Argonne National Laboratory at our Reactor Testing Station in Idaho, demonstrated that it may now be possible to design boiling reactors which will operate in a stable, self-regulating manner, and which in the event of trouble will shut themselves down without serious damage. These developments constitute a major contribution toward safe power reactors.

Last but not least of these explorations is the new proposed fast neutron power breeder which we call EBR 2 and which is a direct outgrowth of our experience on EBR 1, the first experimental breeder reactor at our test station in Idaho.

Let me explain the term "breeding" and why this process is so important. Unfortunately, all the atoms of uranium as they occur in nature are not capable of undergoing the fission process to an appreciable extent. Only the isotope U-235 does this and this isotope is contained in uranium to the small extent of 1 part in 140. The other isotope, U-238, however, can be bombarded with neutrons and transmuted to the element plutonium.

Plutonium is a fissionable material and can be used as a fuel. This is the process that takes place in the Hanford production reactors. Laboratory-scale experiments with EBR fuel indicate that it is actually possible to produce more fuel than is burned and at the same time obtain useful energy. This process of producing more fuel than is burned is known as breeding.

Visualize, if you can, a conventional power plant that not only burns coal to ashes, but also creates fuel in the process. Further, more of this fuel so created, would be produced, than the coal burned. This is, in effect, what is possible in a breeding reactor, and the EBR is now being studied to determine how much fuel can be

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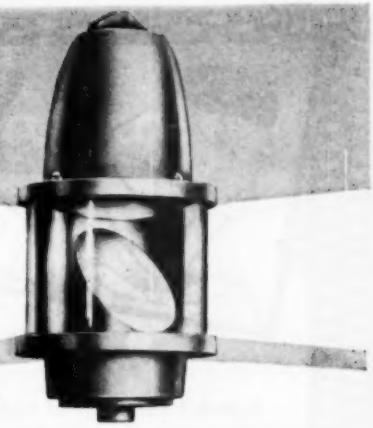

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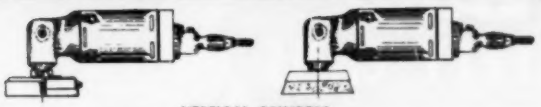

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Incidentally, EBR No. 1 generated the world's first production of significant amounts of electricity from a nuclear reactor heat source on December 21, 1951, when four bulbs were lighted. The following day the external electrical supply to the building was disconnected and the entire power load was carried by the reactor-boiler-generator system. This included all lighting, power requirements for auxiliary equipment such as pumps, fans, etc., and for the machine shop.

If this process of "breeding" can be made successful and the cost of chemically separating the plutonium from the inactive U-238 can be reduced sufficiently, fuel costs for our nuclear power plant may become ridiculously lower than anything now considered attainable.

In conclusion, let me add a word of caution about keeping the atom in proper perspective. It is not a magic wand for solving any manufacturing problem.

The radioisotope is simply a new tool which many industrial firms are using effectively in improving operations with resultant cost savings.

It should hardly be necessary to stress the very real energy shortage that we face in the future. Last year's output of electric power was 430 billion kilowatt hours, but even with this tremendous output and our constantly expanding capacity, we are just barely meeting the demand.

The AEC as a power user has jumped in a few short years from nothing to the point where today it is the largest single power consumer in the nation.

If one looks about for a substitute for carbon fuels—there is only one that is potentially ready and able to go to work. That is the atom. Therefore, in view of the rapid advances being made in reactor technology, I feel that the possibilities for generating competitive electrical energy from nuclear fuels are very real and areas with high power cost cannot afford to neglect opportunities to keep abreast of developments in this field.

The President's Medal

Awards made by the National Safety Council for successful application of artificial respiration

JAMES J. CONNELLY, construction safety supervisor, Pennsylvania Power & Light Co., New Philadelphia, Pa.—drowning.

FRANCIS J. JACOBSON, machine operator, United States Rubber Co., Eau Claire, Wis.—drowning.

JOHN FAIRBAIRN, swimming instructor, Aberdeen School District No. 5, Aberdeen, Wash.—drowning.

Calendar Contest Winners For August

First prize in the National Safety Council's Safety Calendar Contest goes this month to William B. Clawson, Reynolds Metals Co., Richmond, Va. The theme in this contest was stop accidents—don't take needless chances. Mr. Clawson's line was adjudged the best of all those submitted. It was:

No skilled champs invite cramps recklessly.

Second prize went to Marian L. King, Universal Atlas Cement Co., Universal Pa., for this line:

DON'T swim solo in lake, stream or sea!

Third prize was awarded to Edward Barnes, B. F. Goodrich Co., Akron, Ohio, for the following line:

Even skill—used for thrill—can kill! See!

The August limerick was:

I can swim more'n a mile, boasted Lee.
Risky? Sure—but it doesn't scare me!
But his bragging backfired
When he suddenly tired

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William Anderson, Consumers Power Co., Muskegon, Mich.

Mrs. Ben Goddard, B. F. Goodrich Co., Kansas City, Kans.

Raymond H. Welsh, Pittsburgh & Conneaut Dock Co., Conneaut, Ohio.

Grace Raynor, Pullman Co., New York, N. Y.

Mrs. John A. Rhodes, Railway Express Agency, Philadelphia, Pa.

Mrs. Mildred S. George, Eli Lilly & Co., Indianapolis, Ind.

J. V. Carson, U. S. Steel Corp., Gary, Ind.

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George Gambler, Bethlehem Steel Co., Bethlehem, Pa.

—*Next page*

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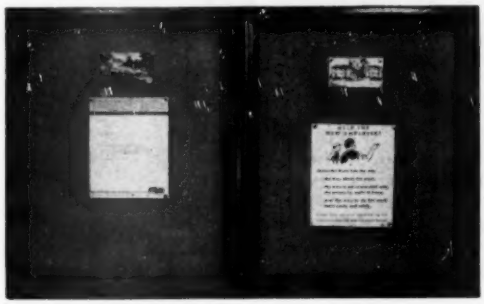

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Industrial Health

—From page 140

This high rate of heart disease deaths is primarily due to coronary heart disease. Among the overweight insurance company policyholders, coronary heart disease accounts for a substantially smaller proportion of the heart disease deaths than among the general population.

There are certain limitations on these insurance statistics, in spite of the fact that the overweight insurance company policyholders who reduce and get their policies re-rated showed a better mortality record than the rest of the overweight policyholders. One of the major limitations is that the amount of excess mortality of overweight men shown by the insurance company figures will not account for the excess mortality of American men as compared with Englishmen, Swedes, Dutchmen or Italians.

Another limitation of these data is that they treat overweight as a simple entity and do not distinguish between overweight due to fat and overweight due to other

peculiarities of body composition. At the same time, they make no compensation for the person who is excessively fat but not overweight. There is a considerable number of American men in this category in middle age.

A simple way to check the relationship between overweight and coronary heart disease is to compare the weight ratios of people with proven coronary disease and compare these weight ratios with those of the general population of the same age. This has been done in an exhaustive study of 866 cases of coronary disease in the United States Army of which diagnosis was established at autopsy in 450 cases.

These men had weight ratios identical with those of soldiers of the same age and length of service killed in military accidents at the same time. They were also the same as the weight ratios of soldiers surviving coronary disease. There have been at least five other studies of other groups which come to the same conclusion.

A considerably more direct relation seems to occur between coronary disease and serum cholesterol concentration but cholesterol concentration is also not simply related to body weight. It is related in some manner to the character of the diet.

There is some indication that overweight contributes to the development of hypertension and hypertensive heart disease but not that it contributes significantly to coronary heart disease.

Safety Library

—*From page 148*

Eye Protection

That Ounce of Prevention in Eye Safety. By James E. O'Neil. Nursing World, July 1954, p. 32.

Fertilizer Industry

Safety Facts and Figures. By W. C. Creel. Farm Chemicals, August 1954, p. 48.

Fire Protection

Air Agitation Tests in Arabia. By A. G. Downing. Quarterly of the National Fire Protection Association, July 1954, p. 61.

How to Prevent Large-Loss Fires

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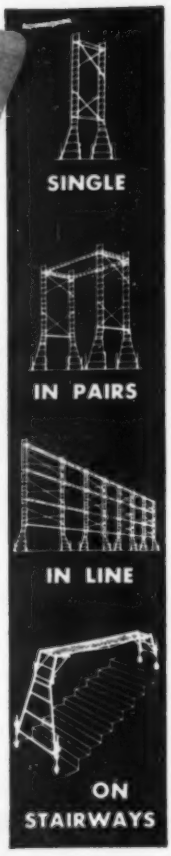

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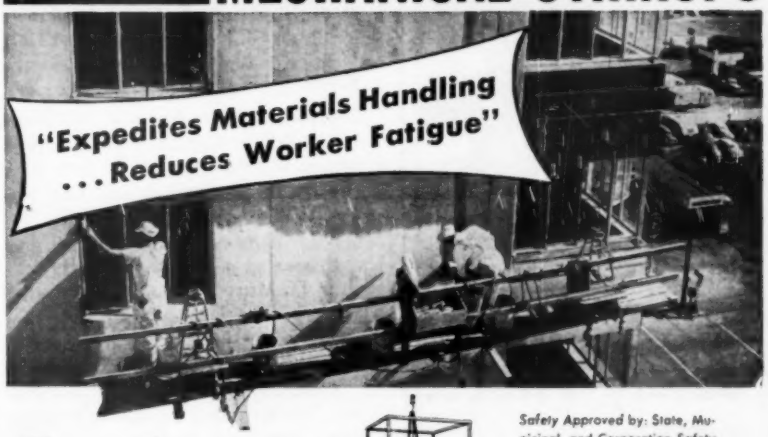

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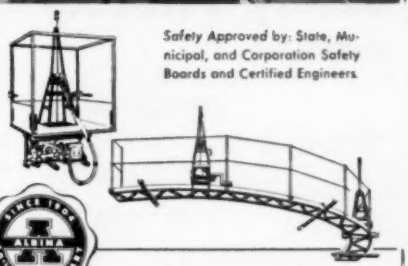

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in Factories. Engineering News Record, July 15, 1954, p. 28.

Industrial Storage Fire Potentials. By R. M. Russell. Quarterly of the National Fire Protection Association, July 1954, p. 69.

Tank Car Explosion. By M. E. Woodworth. Quarterly of the National Fire Protection Association, July 1954, p. 5.

Flammable Liquids

Classification of Flammable Liquids. By J. S. Queener. Quarterly of the National Fire Protection Association, July 1954, p. 57.

Hospitals

Advances in Operating Room Safety. By Carl W. Walter. Quarterly of the National Fire Protection Association, July 1954, p. 31.

Lighting

Lighting and Seeing. By R. A. Sherman. The Plant, August 1954, p. 45.

Nurses

The Safety Engineer Defines the Structural Relationship. By Robert H. Schubel. Nursing World, August 1954, p. 25.

Off-The-Job

Off-the-Job Safety. By Catherine H. Smith. Nursing World, July 1954, p. 17.

Ropes

Installation and Care of Shaft Hoist Ropes. By S. L. Lovett. Canadian Mining Journal, August 1954, p. 64.

Talks

Preparing a Safety Talk. By Arthur D. Murphy. Supervision, July 1954, p. 15.

Vibration

Eliminating Vibration in the Bindery. Bookbinding and Book Production, July 1954, p. 37.

Light travels at an amazing speed until it hits the human mind.

Nowadays women's clothes are not designed so much to make a girl look slim as they are to make a man look 'round.

Many a go-getter is afterwards sorry that he gotter.

SAFETY PLUS!

SAVE fingers, eyes and dies! Get Osborn Safety Pliers . . . made of Osmolloy, the sturdy, long lived aluminum alloy that will flatten under impact, leaving dies unhurt. Thousands now in use. Write for literature!

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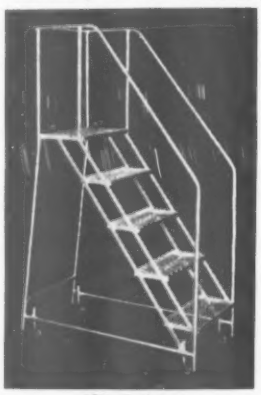
WELDED STEEL SAFETY LADDERS

For Filing Rooms—Stock Rooms—Vaults



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45"—5 Step

New improved design now being made from 1" diam. round furniture tubing.

Mounted on Swivel Brake Casters which allow the ladder to be rolled freely when no one is on it. When you step on the ladder the rubber cushioned legs rest on the floor and prevent rolling.

Made in 7 heights: — 18" 2 Step, 27" 3 Step, 36" 4 Step, 45" 5 Step, 54" 6 Step, 63" 7 Step, 72" 8 Step.

All are made in 18", 20" or 26" width. Send for Circular No. 53-N and prices on these ladders and our full line of Wood Rolling Ladders.

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Keep tubes in place with Den-El Fluorescent Lamp Guards, easily installed with screwdriver. Stainless steel, they spring open for relamping or cleaning, and last a lifetime.

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Avoid SHOCK injury!

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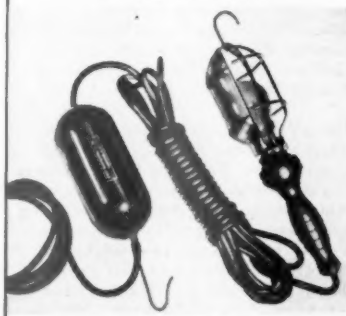

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"There has never been an accident, due to electric current, since we adopted your Saf-T-Lite," so writes the Safety Engineer for one of the largest Utilities in the East. Yes, safety men everywhere are insisting that the Hindle Saf-T-Lite be adopted as standard equipment.

Write on your business letterhead for free folder giving complete information as to various sizes, prices, etc.

HINDLE TRANSFORMER CO., INC.
56 Wilson Church Road, Flemington, N. J.

ABC Celebrates Fortieth Anniversary

NATIONAL SAFETY NEWS takes pleasure in saluting the Audit Bureau of Circulations, of which it is a member, and which this month celebrates its fortieth anniversary. The NEWS has belonged to ABC since 1927, and the circulation certification service performed by the Bureau has been an important element in the sound business relationship that the magazine enjoys with its many advertisers.

Old timers in the safety movement may recall that safety equipment and health product advertising appeared very early in the history of the NEWS—the July 1920 issue to be exact. Just as now, Council officers recognized that advertising was both a natural and effective means of helping Council members keep informed of new developments. The advertising pages of the NEWS, supported by a strict advertising policy, have thus become a respected source of important engineering information.

Advertisers' use of our pages to tell American industry about their products has, we feel sure, contributed to the remarkable growth of the industry over the past thirty years. Revenue from advertising has also enabled the Council to perform services for its members which would otherwise have been out of the question.

The ABC's twice-a-year audit of the Council's accounting and mailing records certifies to the many kinds of information which advertisers want to know: How much paid circulation? What is the geographical breakdown of readership? How are subscribers classified as to business and occupation?

These and many more questions are answered by ABC, and these answers provide many of the facts which advertisers need, to be sure that they are sending the right message to the right people.

There are limitless opportunities in every industry. Where there is an open mind, there will always be a frontier.
—Charles F. Kettering

You Can't Fall
IT'S A LIFE SAVER

IT LOCKS—IT HOLDS
Prevents death and injuries from falling.

SAFETY DEVICE FOR LADDERS

Easy and inexpensive to install: Clamps to rung, peg, pole or frame. No welding or cutting.
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EMALFON®
—SINGER'S *Patented
INSULATED GLOVE

A new kind of glove—so different it's patented—ideal on hot jobs that do not exceed 700 degrees. Made with three thicknesses of material: Outer layer of terry cloth, treated to make it flame-resistant; inner layer of all-wool for added insulation; third layer (next to skin) of soft, fleeced cotton. This combination gives flexibility and long wear.

In many cases it has replaced asbestos gloves at a big saving. Fine for extra warm welding jobs.

If not available from your safety equipment dealer, write us for information and prices.

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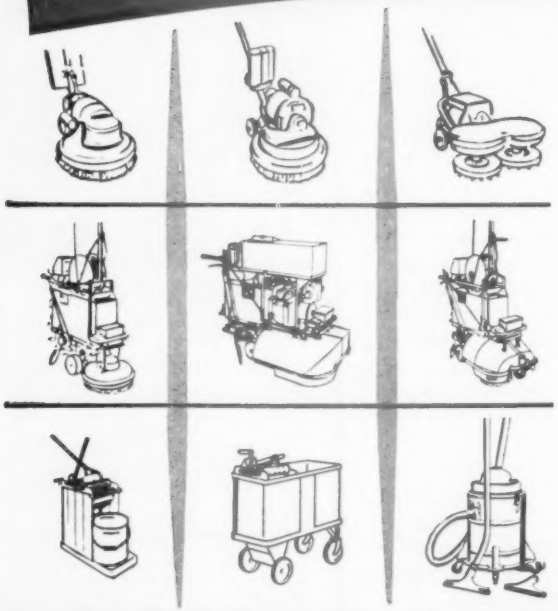
with *Job-Fitted* EQUIPMENT!

Choose from the COMPLETE *Finnell* Line

More than a score of models and sizes permits selection of the equipment that's exactly right for your job!



However much a maintenance man may want to do a good job, and at the same time show savings in labor costs, he's *stymied* if the machine is too small, or too large, or is otherwise unsuited to the job. Different floors and areas call for different care and equipment. That's why *Finnell makes more than a score of floor-maintenance machines.* From this complete line, it is possible to choose equipment that is correct in size as well as model . . . that provides the maximum brush coverage consistent with the area and arrangement of the floors.

Finnell makes *Conventional Polishing-Scrubbing Machines* in both concentrated and divided-weight types, each in a full range of sizes . . . a *Dry-Scrubber*, with self-sharpening brushes, for cleaning grease-caked floors . . . *Combination Scrubber-Vac Machines* for small, vast, and intermediate operations, including gasoline as well as electric models . . . *Mop Trucks* . . . *Vacuum Cleaners* for wet and dry pick-up, including a model with By-Pass Motor. In addition, *Finnell* makes a full line of fast-acting *Cleansers* for machine-scrubbing . . . *Sealers* and *Waxes* of every requisite type . . . *Steel-Wool Pads*, and other accessories — *everything for floor care!*

In keeping with the *Finnell* policy of rendering an individualized service, *Finnell maintains a nation-wide staff of floor specialists and engineers. There's a Finnell man near you* to help solve your particular floor-maintenance problems . . . to train your operators in the proper use of *Finnell Job-Fitted Equipment and Supplies* . . . and to make periodic check-ups. For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2210 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

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Originators of Power Scrubbing and Polishing Machines

Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

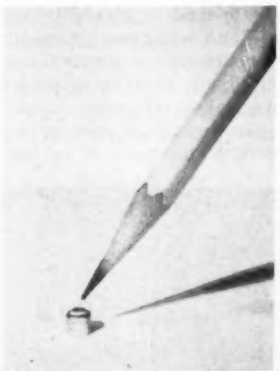
NEW SAFETY EQUIPMENT

Further information on these new products may be obtained by writing direct to the manufacturer or by circling the corresponding item number on the Reader Service Postcard.

Subminiature Thermal Switch

Known as the MiniTherm, this miniature thermal switch operates on a new principle. A chemical forms an insulating barrier between two electrodes until a predetermined switching temperature is reached, at which time the switch becomes permanently conductive.

The switch is 3/16″ in diameter and 3/16″ long. Below a predetermined switching temperature, its resistance exceeds 10 megohms. When the switching temperature is reached, the resistance becomes permanently less than 0.10 ohm. Switches are available at switching temperatures from 150 F to 400 F in increments of 25 degrees, and from 400 F to 1,000 F in increments of 50 degrees. Accuracy is said to be plus or minus 2%. High current capacity permits direct operation of



solenoid valves, small motors, actuators, or other power devices without intermediate relays or small d-c amplifiers. Because of simple construction and small mass, this switch is said to operate reliably under shock or vibration.

MiniTec, 5423 Delaware Ave., Los Angeles 41. (Item 1)

Plastic Saw Guard

Shopmaster table saws are now equipped with a safety guard molded of transparent red Tenite butyrate plastic. This guard replaces the previous metal or cast type of guard, and is said to be exceptionally re-

sistant to shattering, chipping and corrosion. Transparency permits the operator to see the cutting operation.

Flambeau Plastics Corp., 501 Seventh St., Baraboo, Wis. (Item 2)

Extension Ladder

A new extension ladder development combining aluminum dowels and Douglas fir rails has just been announced. The manufacturer claims that the fully rodded aluminum dowels and ¼″ recesses in the rails give added strength, and the construction gives protection against electric shock. The dowels are fully ribbed to prevent slipping, and will not warp.

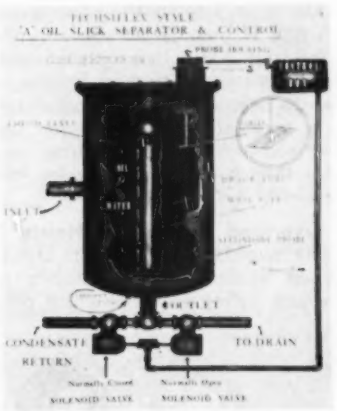
This line of ladders is available in 16 to 44 ft. lengths and can be obtained with or without rope or pulley. The bottom width is 9″; 15½″ at the top. Single ladders 8 to 22 ft. long are also available.

The Rich Ladder and Manufacturing Co., Carrollton, Ky. (Item 3)

Oil Slick Separator and Detector

Designed for use in boiler installations which burn fuel oils requiring preheating, this unit consists of a settling chamber type separator incorporating an automatic oil slick detection probe system and a control box which converts the probe detection signal into control and alarm responses. The separator is divided by a draft-tube into an outer or annular settling chamber where any possible slick collects at the surface, and an inner chamber from which the oil-free water is returned to the condensate return system.

The probe detection system is contained in the outer chamber. A thin slick layer at the surface of the liquid in the outer chamber produces an electrical unbalance between the



two probes. This results from a partial screening of the grid-probe by a film of oil. When this occurs, it is communicated to the control box. The control box then automatically discontinues the normal condensate return flow, and institutes a diversion of the effluent to waste.

The system also has a control action on power failure, and provides for visual and audible alarms on a slick detection.

Techniflex Corp., 55 Jersey Ave., Port Jervis, N. Y. (Item 4)

Vacuum Sheet Lifter

Trade named the Pres-Vac Lifter, this device has been designed to separate and move sheets of steel. It also can be used in handling glass, plywood, masonite, plaster board, or

any other object that has a flat surface on which a vacuum can be maintained.

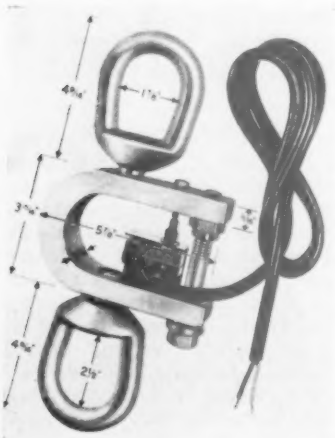
The lifting power is produced by passing compressed air through the venturi at 45 pounds per square inch, creating a constant vacuum of 22 inches of mercury. The vacuum is conveyed to the rubber cup through passages in the handle and a regulator is supplied to reduce the line pressure to 45 psi. As long as the trigger in the pistol grip type handle is held down, the suction cup will pull 11 pounds per square inch.

The unit is supplied with a 5-inch neoprene cup, aluminum handle, a 96-inch hose and pressure regulator. It is complete and ready for use after connecting to an air line.

F. J. Littell Machine Co., Air Division, 4555 Ravenswood Ave., Chicago 40. (Item 5)

Overload Control for Hoists

The manufacturer of Dillon Dyna-Switch announces the addition of two new safety features which provide increased protection from overloads and side twist.



The Dyna-Switch is designed to prevent overload damage to hoisting equipment. The device consists of a U-shaped bar made of tool steel and designed to flex millions of cycles without losing resiliency. Placed on the hoist hook or above it and in series with the load, it automatically breaks the lifting circuit whenever the pre-set safety maximum is exceeded, although allowing the load to be lowered for adjustment to a safe weight. Operating range is from 500 to 10,000 pounds, and accuracy is said to be one half of one per cent.

The first of the two new features is the installation of a free-riding stop bolt at the open end of the U-shaped bar allowing a deflection of only 11,000 pounds, while still permitting accidental overloads up to 35,000 pounds without injury to the calibration. The second feature, incorporated because of the strong twisting action of heavy suspended weights, is the electric welding of the lifting eyes in position, providing resistance to turn-out torque.

W. C. Dillon & Co., Inc., P. O. Box 3008, 14620 Keswick St., Van Nuys, Calif. (Item 6)

Midget Dust Collector

Designed especially for control of dust from individual dust creating machines or those remotely located from a general dust control system, the model 5N20 DUSTKOP is rated at 558 cfm on a 4" inlet. A multiple blade paddle wheel fan of the self-clearing type is powered by a continuous duty ⅓ hp motor which permits the collector to be used even where dusts having fibrous content of considerable length are present.

Dusts, centrifuged out by the cyclone separator which is an integral part of the unit, is retained in the dust compartment which comprises the entire base of the collector. The cleaned air, together with any toxic gases, smoke and obnoxious odors, is exhausted outdoors through the 6" diameter exhaust connection at the top of the cyclone.

The collector can be furnished with caster mountings for maximum portability and with quick acting clamps for connecting to dust source and to exhaust outlet at any one of several locations.

Aget-Detroit Co., 209 Main St., Ann Arbor, Mich. (Item 7)

Die Puller

The illustration shows the new Barrett 30-degree die puller, mounted on the platform of a Barrett PO-40 Hi-Lift electric truck. This unit is handling a 4,000-pound load of tin plate.

The platform of the truck is angled at 30 degrees from the base structure of the truck. This arrangement lends convenience and greater ease to a variety of die pulling and other handling operations where narrow aisle conditions prevail.

The truck can approach the press or wherever the load is located from an angle, and function in places where the conventional arrangement of the die puller might not work.

This unit is available in capacities up to 6,000 pounds, and can be converted into a pusher by means of a bar which reverses the movement. All movements of truck and die puller are controlled by means of push buttons conveniently located in a movable control box connected to the truck by a cable.

Barrett-Cravens Co., 628 Dundee Road, Northbrook, Ill. (Item 8)

Utility Hook for Power Lines

This hook has a safety gate that may be opened or closed by means of Hot Line equipment, thus eliminating necessity for personal contact with the hook when being placed on or being taken off power lines. The hook can be locked open or locked closed with hot tools or by hand.

The B-B Utility Safety Hook is available in three sizes: No. 1 with a working load of 1,000 pounds, No.

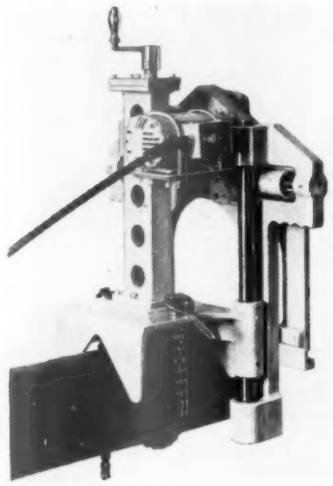
3 up to 1,700 pounds, and No. 4 with a capacity of 2,400 pounds. The No. 1 hook is used primarily by linemen on safety belts and hand tools. The No. 3 is recommended for use on 3″ blocks, using ½″ rope, while No. 4 is recommended for use on 4″ blocks, using ⅝″ rope. This hook can also be used with pullers and come-alongs.

E. D. Bullard Co., 275 Eighth St., San Francisco 3. (Item 9)

Portable Power Pipe Saw

Called the "Guillotine," this saw has been designed for the on-the-job cutting of 2″ to 8″ cast iron and steel pipe, as well as bar stock and beams. It weighs 120 pounds, and may be operated in a space 25 inches wide.

A chain pipe vise clamps the Guillotine saw to the pipe, ready for cut. The steel V saddle base assures a square cut at right angles to the



pipe, which itself acts as a machine tool base. According to the manufacturer, a 6″ standard wall steel pipe may be cut in 8 minutes; a 6″ wall cast iron pipe in 4 minutes. Exact cutting time depends on pipe characteristics.

The E. H. Wachs Co., 1525 North Dayton St., Chicago 22. (Item 10)

Black Light Inspection Lamp

The Blak-Ray model 3X-4 lamp is designed for use in difficult inspection procedures, in flaw detection, control, processing, for invisible markings, coding, and other manufacturing operations, as well as for agricultural products examination and inspection.

The fact that over 3,000 substances are activated by invisible ultra-violet black light so they glow or fluoresce in different shades and colors is the basis for this new faster method known as "fluorescent inspection." These substances may be "naturally" fluorescent, such as oils, mould, and other types of contamination, or they may take the form of tracer pastes, or powders, lacquers, invisible inks, water or oil-soluble additives, and other substances to be integrated with present materials in varying proportions.

According to its manufacturer, the Blak-Ray is harmless to eyes or skin, and has no deleterious effects on products. The lamps burn cool, start and re-start with no warm-up or cooling-off period required, and replaceable tubes are rated at 7500 hours.

When requesting information, please specify proposed application, giving full details, so pertinent data may be sent.

Ultra-Violet Products, Inc., 145 Pasadena Ave., South Pasadena, Calif. (Item 11)

Aluminized Clothing

A new line of protective apparel made from aluminized asbestos and aluminized duck has just been announced by American Optical Company. The asbestos fabric is in a new herringbone weave, said to be 50% lighter in weight than standard basket weave cloth.

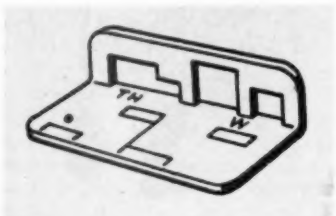
Aluminized fabric reflects 90% of radiant heat. This means that workers can operate in greater heat, and for longer periods. The light weight permits greater freedom of movement and reduces fatigue.

The new process for aluminizing the fabric makes the metal an integral part of the cloth, thus permitting flexing without cracking or peeling.

American Optical Co., Southbridge, Mass. (Item 12)

Lineman's Gaff Gauge

Identified as the KG No. 1 Gaff Gauge, this precision instrument enables the lineman to make a quick safety check on correct gaff thickness and width. The gauge is made of hardened steel, and is packed in a plastic case which includes instructions and helpful information on



sharpening gaffs and testing for proper sharpness by the "plane test" method.

Mathias Klein & Sons, 7200 McCormick Rd., Chicago 45. (Item 13)

Fire Extinguisher

This new dry chemical fire extinguisher is effective for gas, oil, grease, or electrical fires. Pressurized to 150 psi, with air or nitrogen, it becomes operative immediately when the pin is pulled and pressure

is applied to the lever. The special new transparent nozzle, molded of corrosion-resistant Tenite plastic, fans a flat discharge pattern in downward direction over a wide area. Metered valve passageways maintain a dense, uniform discharge. If only partially discharged, the extinguisher can be left standing to guard against reflash, without loss of pressure. The nozzle fits over a metal holder when not in use.

The valve gauge gives a constant reading of pressure, indicating when recharging is necessary. The valve and siphon-tube assembly removes as a single unit to leave ample opening for recharging.

American LaFrance Foamite Corp., 100 LaFrance St., Elmira, N. Y. (Item 14)

Ground Detector and Alarm

The Brunt ground detector and alarm is a sentinel to warn of accidental grounds on power lines. It is enclosed in a gray crackle-finish steel cabinet, 16″ x 8″ x 8″, weighing 14 pounds.

On the face of this instrument are three phase indicator lights, a red bull's-eye warning light, a fuse holder, a neon indicating light, and a reset button.

When the alarm is wired into the power system, the three phase indicator lights glow with equal intensity until a ground occurs on the system. When this happens, the following warnings occur: (1) One of the phase indicator lights will dim or go out and the other two will brighten. The former indicates the phase of the ground. (2) Simultaneously the red warning light will flash steadily at

about 20 times a minute. Also, a relay actuates a signal, such as a bell or horn connected to the instrument. Also, a relay actuates a signal, such as a bell or horn connected to the instrument. (3) When the reset button is pressed, the audible signal is stilled and the red warning light changes from flashing to a steady glow, remaining lit until the ground

is cleared. Connections to the ground alarm should be made at the main distribution panel, although the instrument itself may be installed in any spot convenient for the maintenance department to observe.

Parr Manufacturing Corp., 44 Austin St., Newark 5, N. J. (Item 15)

Magnifying Glass for Welders

Welders using bifocal glasses frequently complain that they derive no benefit from the lower "near seeing" section of their glasses. When the welder tries to use the lower section of his glasses, he looks into the darkness of the inside of the helmet.

To remedy this condition, magnifying glasses which may be fitted back of the welding plate are now available. The magnifying glasses are 2" x 2-1/16", and are available in 4 strengths: 1, 1.5, 2.5, and 3 diopter. A separate glass is used for each eye. The magnifying glass is not intended to replace the prescription glasses, but merely to increase the seeing power of the upper section of the bifocals.

Sellstrom Manufacturing Co., 622 N. Aberdeen St., Chicago 22. (Item 16)

Anti-Fog and Cleaner

Called Klear-Glass, this new product cleans all glass surfaces, and is also said to prevent the formation of steam on glass. It may be used on eye glasses, windows, mirrors, and windshields.

For those who wear glasses, the liquid is available in a plastic applicator about the size of a lipstick tube. The user removes the sealing screw-top, uncovering a soft felt wick inside. As the wick is rubbed across both sides of the glasses, it deposits a film of liquid which fills all the minute pores that might hold dirt particles or steam droplets. The liquid is then wiped off with a soft

cloth or a handkerchief and the eye glasses are said to be clean and fog-proof for an entire day.

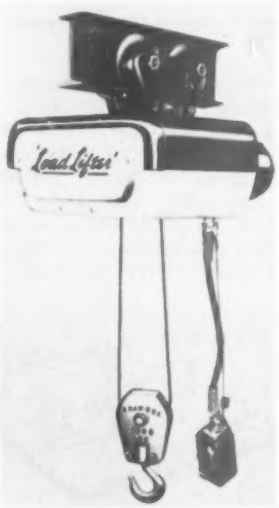
The manufacturer states that the liquid is non-toxic, non-flammable, and non-greasy. Product claims are supported by independent laboratory tests.

The Buckley Corp., 607 Fifth Ave., New York 17. (Item 17)

Electric Hoist

Available with lug, hook and trolley suspensions in capacities of 1,000 and 2,000 pounds, this new, lightweight hoist was especially developed for production lifting jobs.

Among the construction features are frames made from aluminum al-



loy, alloy steel heat-treated gearing with machine shaved teeth, double brakes, magnetic control with only 24 volts at push buttons, machine grooved drums of large diameter, interchangeable suspension and positive upper stop to prevent overtravel of hoist hook. The hoist may be powered with standard electric currents, and is identified as the Series '600" Load Lifter.

Shaw-Box Crane & Hoist Div., Manning, Maxwell & Moore, Inc., Muskegon, Mich. (Item 18)

Industrial Glove

A new all-neoprene glove, called the Neo-Sol, has been placed on the market. Color of the glove is black with red inner lining and a red rolled cuff. It is available with either "Grip-Saf" hand or smooth finish. It is manufactured in five sizes, four weights and in lengths from 10½" to 18".

Charleston Rubber Co., Stark Industrial Park, Charleston, S. C. (Item 19)

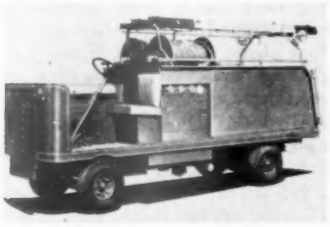
Industrial Fire Truck

The high-pressure fog method of fighting fires has now been incorporated in a new industrial fire truck. With size and maneuverability engineered for negotiating factory aisles, this new truck is said to have the fire-fighting ability of a full-size municipal truck.

Using only one-tenth the volume of water discharged under ordinary pressures, the fog apparatus is effective against fires in oil, gasoline, lacquers, solvents and all other flammable liquids and materials except magnesium.

The fog pressure is discharged at the rate of 20 gpm at 600 psi nozzle pressure. Two fog lines, operated from spring loaded reels, are equipped with trigger controlled high pressure fog guns. Each gun may be operated by one man and is quickly adjusted from distant stream to close up fog. The truck's 300-gallon tank holds enough water for a full 20 minutes of normal fire fighting, and is equipped to pump water

from plant water lines or from a straight draft source such as a pond or a cistern.

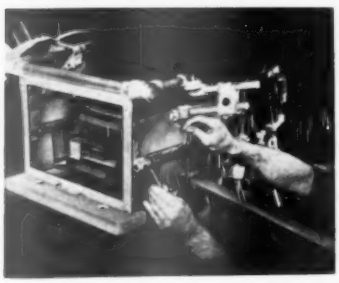


The unit is 4′ wide, 140″ long and 79″ high and has a wheelbase of 76″ and a turning radius of less than 15′. It is powered by a 98 hp engine and can go 25 miles per hour with four forward speeds and reverse. The front end has a heavy-duty "bucking head" for pushing through aisles blocked with trays, pallets or other obstacles.

John Bean Div., Food Machinery & Chemical Corp., Dept. IF, Lansing 4, Mich. (Item 20)

Air Controlled Die Enclosure for Punch Presses

Among the advantages cited for this new device for punch presses are faster set-up, easier die change, reduced fatigue and unobstructed view. The transparent window is quickly opened to allow fast die changes or to adjust stock. While the window is open, the press cannot be tripped. Opening the window



automatically cuts off the air supply to the foot pedal valve and clutch cylinder by action of the cam-operated valve.

The illustration shows how the adjustable finger side shields can be set to envelope stock and die clamps, leaving no openings for fingers to enter die. A single nut tightens or loosens all fingers in the side shield. Adjustment of the side shield to fit different stock and die size is quick and easy. The window is constructed of ⅛″ thick Lucite which, while transparent and allowing a full unobstructed view of die space, also protects the operator's face and eyes from flying particles.

American Allsafe Co., Inc., 1245 Niagara St., Buffalo, N. Y. (Item 21)

Fire Fighting Hose

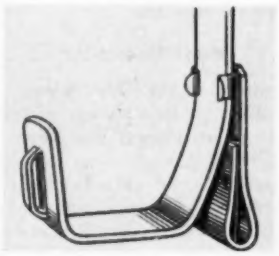
A new fire fighting hose for the oil and chemical industries, called Petrochem, is said to resist such materials as alcohols, bleaching agents, dry cleaning solvents, hydrocarbons, ketones, oils and synthetic detergents. It also resists weak acids at boiling temperature and strong acids at room temperature.

Constructed of an oil-resistant neoprene tube and covered with Dacron yarn, this hose is impregnated with a skim coat of neoprene, making it oil resistant inside and out. The manufacturer states that it will withstand severe abrasion and temperatures as high as 375 F, and pressures of 500 psi. It is available in 1½″ and 2½″ sizes.

Quaker Rubber Corp., Div. of H. K. Porter Co., Inc., Philadelphia 24, Pa. (Item 22)

Clip-On Gaff Guard

This new guard is designed to provide protection for spurs on climbers when not in use. It also can be used to safeguard other equipment in the



lineman's tool kit.

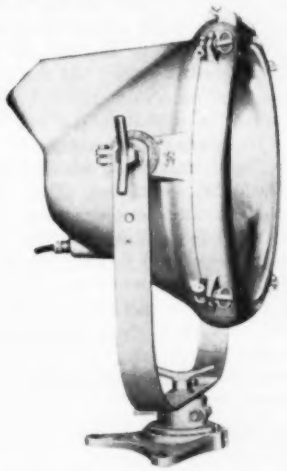
The guard is made of leather and is firmly riveted. Rustproof stainless steel spring clip holds gaff guard to the climber shank. A stop piece of rigid fiber prevents the gaff from penetrating the guard.

Mathias Klein & Sons, 7200 McCormick Rd., Chicago 45. (Item 23)

Floodlight

This new 20-inch floodlight, designated Type 20175, is fully enclosed and constructed throughout of corrosion-proof materials. It is designed to burn 1000-watt G-40, 1500-watt G-48, and 1500-watt PS-52 lamps which have special burning positions recommended by the manufacturer. The floodlight will also take the 750 and 1000-watt PS-52 lamps and 700 and 1000-watt mercury vapor lamps. Door and glass joints have a tight, soft packing seal which keeps moisture and dirt from the reflector, lamp and inside of lens, thereby preserving the beam efficiency with a minimum of maintenance.

The full 360 degree vertical and horizontal body adjustments are provided with a locking device to avoid any chance of accidental movement. A register, which is part of the locking device, makes it easy to re-



turn the projector to its original adjustment if it is necessary to tilt or turn it for relamping or cleaning.

The Pyle-National Co., 1344 N. Kostner, Chicago 51. (Item 24)

Disinfectant for Safety Equipment

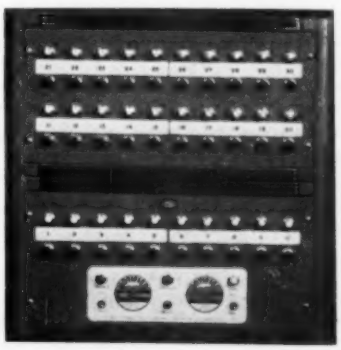
A new concentrate mixed with water forms an effective disinfectant for sanitizing all types of goggles, respirators and other personal equipment. It is said to be non-irritating to the skin and non-toxic in normal use. It is registered under Section 4 of the Federal Insecticide, Fungicide and Rodenticide Act.

After sanitizing in the solution, articles need not be rinsed, or wiped dry. Best results are obtained by simple air-drying, after which equipment is ready for re-use. The solution is available in 6-ounce metered bottles which will produce 24 gallons.

Chicago Eye Shield Co., 2300 Warren Blvd., Chicago 12. (Item 25)

Fire Station Receiving Panel

The Notifier fire station receiving panel is designed so that all fire de-



tection and associated wiring is supervised against shorts, single or

double breaks and power failure. This makes it possible to tie in sprinkler supervisory equipment.

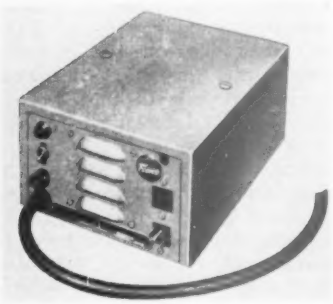
The instant a fire signal is initiated on the local protected premises, the signal is flashed to the auxiliary control panel. At the same instant, the auxiliary control panel transmits the signal to the fire station, the alarm bell rings, and the lights flash, indicating which building has a fire condition. The entire signal reporting action is said to be accomplished within 30/1000 of a second. Reporting is entirely automatic. This equipment is listed by Underwriters' Laboratories and has passed tests for Factory Mutual Laboratories listing.

Notifier Manufacturing Co., 239 South 11th St., Lincoln, Neb. (Item 26)

Inter-Com for Material-Handling Equipment

Femco Carrierphones provide two-way communication between operators of mobile vehicles, such as light haulage trucks, fork-lifts, tow-motors or other similar equipment, and a central dispatcher.

The system provides telephone-clear speech at normal voice levels.



Advantages to users include savings of time, increased efficiency, safety, and general reduction in costs through improved coordination and speedier operation.

Any number of mobile stations may be installed and integrated in a single system. Each mobile station consists of a transreceiver unit with an integral speaker and a press-to-talk, release-to-listen, hand microphone. Two-way FM carrier current, rather than radio, is the method employed, with a fixed antenna wire strung from a fixed-point dispatcher station over the area in which the mobile stations operate. A loop antenna is installed in a convenient position on each vehicle. The transreceiver unit measures only 13" x 9" x 6½", and power is drawn from the battery of the vehicle. No Federal Communications Commission licenses are required to operate the system, and maintenance can be performed by non-licensed repairmen.

Femco, Inc., Irwin, Pa. (Item 27)

Dry Chemical Extinguisher

This new chemical fire extinguisher features a thumb-button trigger and a 35-foot range. These units carry UL approval, and are available in 12, 20 and 30 pound sizes.

The extinguisher is painted a brilliant yellow so that it can be quickly spotted by employees and maintenance men. Valve, trigger and trigger guard are made of brass for heavy-duty outside use.

Randolph Laboratories, Inc., 8 East Kinzie St., Chicago. (Item 28)

Limit Controller

Identified as the "700" Series Limitrol, this new device insures against human or instrument failures which may permit overshooting of critical temperatures. It will automatically shut-off the fuel supply at any specified temperature manually set on the indicator scale, and if desired, will sound an alarm.

The instrument incorporates a thermocouple break protection feature which will shut off fuel input in case of thermocouple failure or broken thermocouple connections. A two-compartment, die-cast case, designed for either surface or flush

mounting, houses the instrument components. Case cover is of two section construction. Both black molded phenolic cover sections are gasketed for protection against dust and moisture.

Wheelco Instruments Div., Barber-Colman Co., Rockford, Ill. (Item 29)

Low-Lift Pallet Truck

A new Warehouser electric rider low-lift pallet truck capable of handling loads up to 4,000 pounds has been designed for operation in 5 and 6 foot aisles. The truck is short and light for low floor capacities and elevators.

Called the RP-4, the truck has a pallet fork lift of 4", and has a lifting time of approximately 5 seconds for full lift with full load. The overall spread of the pallet forks are in standard widths of 25, 27, 30 and 36 inches. Fork lengths are available from 36" to 60" in steps of 6". A two-position speed-control lever located on the right hand side of the operator's compartment can be positioned for operator convenience in facing either direction of travel. The truck has three speeds forward and three

speeds reverse with time delay controls between speeds to insure smooth acceleration. Its rate of travel with no load is 5¼ mph; with a full load, 4 mph. Steering is controlled through spur geared reduction to drive unit with arc of steer over 200 degrees. Spring-loaded dual caster wheels assure four point contact of truck, even on uneven floors.

Yale and Towne Manufacturing Co., Philadelphia 15. (Item 30)

Carburetor and Engine Parts Cleaner

This new self-emulsifying and self-scouring solvent is said to remove stubborn carbonized varnish deposits and paint. According to its manufacturer, it eliminates scraping and minimizes grit blasting which might deface the metal. It operates at atmospheric temperature, thus eliminating heating costs as well as preventing excessive amounts of steam. It is non-corrosive to metal and is said to be safe for aluminum and soft metal alloys.

Hydro-Seal No. 100 contains grease solvents and operators should wear rubber or plastic gloves. If there is a dangerous splashing when the bath

is being filled or emptied, goggles or eye shield should be worn. If the skin is splashed, an immediate rinse with water or ethyl alcohol will prevent ill effect.

Curran Ordnance Chemical Laboratory, Lawrence, Mass. (Item 31)

Hard Hats in Color

Availability of two hard hat models in the following colors has been announced: yellow gold, bronze, blue,

grey, green, and the standard, silver. The special metal dyes have been weather tested, and indicate no fading after 1,000 hours of exposure. The color process does not increase the cost.

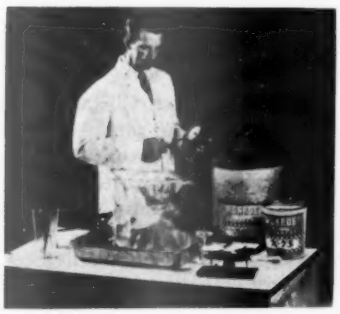
Both the "Roughneck" (full brim aluminum hat) and "Shorty" (short brimmed aluminum hat) are drawn from aircraft grade aluminum and offer high strength, light weight. Both are constructed with the three-ribbed crown to add to the strength and increase the angles of deflection. The headband adjusts to head sizes from 6⅝ to 7¾.

E. D. Bullard Co., 275 Eighth St., San Francisco 3. (Item 32)

Ice-Removing Granules

Addition of a newly-formulated combination rust inhibitor and heat-retaining agent to X-73 ice-removing granules is announced.

Known as "Phosite," the new ingredient is said to increase thawing effectiveness of X-73 approximately 10%, while protecting metal against

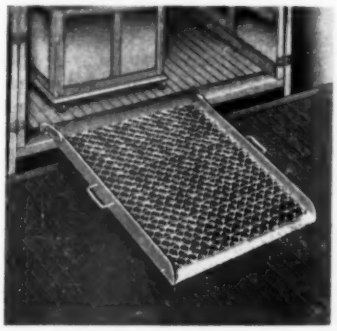


rust action from ice and snow melting. X-73 is applied by scattering lightly over icy surfaces and is claimed to have 30 times the thawing capacity of salt. It is said to have a tendency to spread itself, reducing the cost of cleaning steps, walks, drives, loading docks and parking lots. Other common uses are keeping drains and gutters open and providing quick traction under spinning auto wheels. This product is packed in 100, 200 and 300 pound fiber drums.

The Monroe Co., Inc., 10703 Quebec Ave., Cleveland 6, Ohio. (Item 33)

Loading Ramp

This new ramp is especially designed for use in the small inclines from the loading dock to the truck body. The Bustin Firm Grip Safety Grating permits small industrial casters to roll over its surface easily. It is lighter and sturdier than conventional steel plates, and according to its manufacturer, will permit safe walking under adverse conditions where grease, water, oil and ice can cause slipping. Built-in



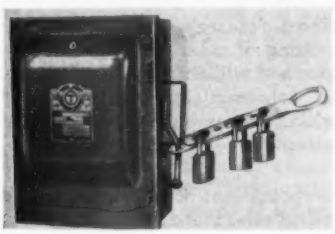
swing-a-way safety pins assure a non-slip grip. The long platform is made in two standard sizes: 30″ x 27″ wide and 30″ long by 30″ wide. Other sizes are made to order.

Bustin Firm Grip Grating Corp., Dover, N. J. (Item 34)

Lockout Device

Used when working on machines and equipment controlled by a common switch box, this lockout device prevents others from throwing the switch, while work it being performed.

As shown in the illustration, up to six padlocks may be used so that current may not be turned on until

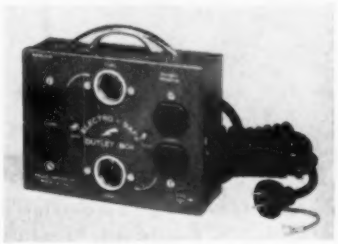


the last man has completed his work and removed his lock. Fabricated of cold rolled steel, zinc iridite plated, the device opens and closes in scissors fashion, jaws at either end providing a secure lock against switch levers, handles and lock holes. The unit weighs 10 ounces and is 8¼″ long.

Industrial Products Co., 2850 N. Fourth St., Philadelphia 33. (Item 35)

Electric Outlet Box

A safe method for using electric hand tools, test apparatus, or similar equipment at remote locations is possible with the new Dalco Electro-Safe outlet box. The box is of steel



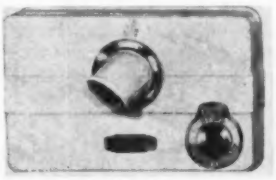
construction, plated and painted to withstand rough usage. The standard unit has two T-slot duplex receptacles with provisions for fusing and grounding, thus protecting both the operator and equipment.. An 8-ft. 3-conductor line cord is generally furnished, but the unit may be purchased less cord or with any special length cord as desired. Outlets other than T-slot can be provided to meet specific requirements.

Measurements of the box are 5½″ x 7½″ x 2½″. It is finished in gray-brown Hammertone and has a chrome-plated handle for carrying.

Dalco Manufacturing Co., Inc., 333 N. 3rd St., Philadelphia 6. (Item 36)

Electric Hand Dryer

An improved semi-recessed electric hand dryer, called the Sani-Dri, is said to give faster drying with an improved heating element and a nozzle which concentrates the air stream from a larger blower and



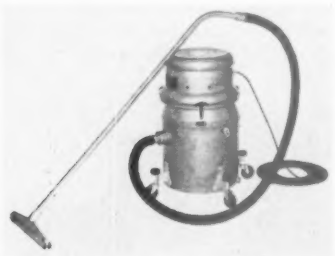
motor than normally used. A new circuit-breaker prevents damage when someone places his hands on the air intake or nozzle. The circuit breaker shuts off the heating element, but automatically makes contact again when the hand is removed.

The Chicago Hardware Foundry Co., 2500 Commonwealth Ave., North Chicago, Ill. (Item 37)

Industrial Vacuum Cleaner

A "by-pass" motor with a separate air current for cooling and disposable paper filter bags are featured in the new Kent Quiet Jumbo vacuum cleaner.

Because the by-pass motor cannot be damaged by moisture in the vacuum air stream, the unit may be used for wet or dry pickup. Actual capacity is 1⅓ bushels of dirt or 9



gallons of water. Dry vacuuming of floors, carpets, mattresses, furniture, etc., is made easier by a disposable paper filter bag.

The unit weighs 66 pounds and is maneuverable on its four 3″-diameter ball-bearing casters. The dirt can has a diameter of 16″ while the over-all width of the unit is 23″ and the height is 29″. The by-pass motor is a 1 hp ac-dc motor and comes equipped with 40 feet of 16-gauge 3-conductor type SJ cable.

Kent Co., 181 Canal St., Rome, N. Y. (Item 38)

New Spectacle-Type Goggles

A new line of Spectacle-Type goggles has recently been introduced that is said to closely resemble modern personal glasses, but are of rugged construction to withstand severe abuse. The manufacturer emphasizes the new comfort-fit design for greater worker acceptance. New L-1 shaped lenses are also featured in the new spectacles. This

new shape provides increased safety by closer conformance to the eye area of the face. Its widest point fits well into the nasal area, and its shape follows closely along the side of the nose to prevent entrance of foreign particles. Produced in a complete range of lens and bridge sizes, the new spectacles are available in non-corrosive nickel silver or non-inflammable acetate frames. Other features are new temple joint construction; new skull temples and new perspiration-proof temple insulation.

Fendall Co., 4511 N. Lincoln Ave., Chicago 25, Ill. (Item 39)

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NEWS ITEMS

The appointment of Jerome Corwin to the engineering staff of the Special Products Division of I-T-E Circuit Breaker Company was recently announced. Mr. Corwin will head the new Design and Development Section on electromechanical devices serve mechanisms and computers. Mr. Corwin was graduated from City College in New York City with a B.M.E. degree and is a member of the American Society of American Engineers.

* * *

National Foam System, Inc., specialists in fire-fighting foam and equipment, announces the appointment of L. John May as plant manager. Mr. May received his degree in chemical engineering from the University of Michigan and has carried on graduate study at Johns Hopkins and Temple University. Previously, he was employed in the production administration of Mutual Chemical Company of America in Baltimore and in similar capacity at General Chemical Division, Allied Chemical and Dye Corporation.

* * *

Miles L. Abel, executive vice-president of the Magnesium Company of America, has announced the appointment of Ambrose L. Duggan to direct the company's recently instituted sales coordination program.

Prior to this assignment, Mr. Duggan has been associated with Marsteller, Gebhardt and Reed, Inc., Chicago, an industrial advertising firm handling the Magnesium Company account. Mr. Duggan will be responsible to William Johansen, vice-president in charge of sales, for market research and development, planning of sales training and sales tools, and will act as liaison between Mr. Johansen and the company's assistant sales managers on these matters.

* * *

Appointment of L. Jack Clarke as general sales manager, Leschen Wire Rope Division, H. K. Porter Company, has been announced by D. W. Vernon, vice-president and general manager. Mr. Clarke has served the Leschen organization as field representative in the New Orleans area and as manager of the New York sales district. He will make his headquarters at the division's main offices in St. Louis.

* * *

Willis M. Partridge, Jr., has just been named assistant sales manager of the Clothing Division of the H. M. Sawyer & Son Company. Mr. Partridge, a Dartmouth College graduate, has been until recently director of sales in the Safety Test Shoe Department of Knapp Brothers of Brockton, Mass.

* * *

At ceremonies held June 3, in conjunction with its annual graduation exercises and the commemoration of the 131st anniversary of its founding, the Massachusetts College of Pharmacy of Boston formally accepted and dedicated the John H. Breck Inc. Microbiology Laboratory. The new laboratory, a gift of John H. Breck, Inc., manufacturers of shampoos and other hair and scalp preparations, was presented by Edward J. Breck, president of the company and a graduate of the Massachusetts College of Pharmacy, class of 1928. Formal acceptance was made by President Samuel M. Best and Professor Howard L. Reed, chairman of the Department of Biological Sciences.

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Manufacturers of safety equipment and related materials are invited to send annnouncements of new products, improved features of existing products, and news relating to their organization. Only items which can be considered "news" to our readers will be published.

* * *

Safety on Suggestions Systems Program

"Is Your Suggestion Plan Safety Conscious?" is the topic of a talk to be given at the Twelfth Annual Convention of the National Association of Suggestion Systems by A. D. Murphy, director of safety and suggestions for Crucible Steel Company of America, Pittsburgh.

Sessions will be held October 18 and 19 at the Drake Hotel, Chicago. Mr. Murphy's talk is scheduled for Tuesday morning, October 19.

TRADE PUBLICATIONS

These trade publications will keep you up-to-the-minute on new developments in safety equipment and health products. All catalogs are free, and will be sent without obligation. Just circle publication number on the Reader Service Postcard.

1. Safety-Step Ladders: Catalog offers 115 models to fit your various ladder needs. Described and illustrated are a complete range of sizes including specifications. Ballymore Co.

2. Solvent Degreaser: Literature gives full details on Brulin solvent degreaser. The solvent degreaser has many widespread uses, and, because of its ability to dry film free, it is particularly adaptable for the cleaning of electrical motors and equipment. Brulin & Co., Inc.

3. Flexaust Hose: Industrial installations of Flexaust Hose and Portovent duct for moving air, dust, fumes, gases, and materials efficiently are described in bulletin No. 40. Flexaust Co.

4. Protect Lives, Prevent Panic: This 4-page bulletin shows how to prevent sudden lighting failures in factories, switchboards, engine rooms, stores or places of public assembly by using a battery-powered emergency light. The unit is plugged into the lighting circuit, and when the normal current fails, the emergency light is automatically turned on. Nickel Cadmium Battery Corp.

5. Type J Fans: This bulletin features fans designed for industrial application, with a thorough description of the construction and classes of type J fans. Capacity tables are given for a wide range of fans, sizes from 12" diameter through 132" diameter. A performance curve indicates the general operating characteristics of the type J fan. Dimension tables, photograph of typical fan assemblies included. Robinson Ventilating Co.

6. "Plant Maintenance Cleaning Guide": Designed for quick reference, the charts list recommended cleaning materials, methods of application, concentrations and temperatures for such specific operations as cleaning, and treating the water in air conditioning and refrigeration units; cleaning compressors and condensors; descaling diesel water jackets and water-cooled furnaces; cleaning floors, etc. Oakite Products, Inc.

7. Electrostatic Neutralizer: Bulletin describes how to solve the critical problem of static electricity. Gives details on how the electrostatic neutralizer bars are effective on moving material as it comes over rollers such as in the paper, plastic, rubber, textile and related industries. Bulletin No. 125 gives full detail. Herman H. Sticht Co., Inc.

8. Steel Flooring: Pamphlet discusses a rolled steel flooring with a raised lug pattern to provide traction for wheels and feet. Specifications given and examples of use shown; such as, industrial flooring, loading ramps, machinery, steps, running boards, etc. Inland Steel Co.

9. Fire Extinguishers: What type of portable extinguisher to use on what size and kind of fire, how to operate it, capacity, range of stream, recharging period, extinguishing effect, effect of freezing—all information given on single chart in this catalog. Line of portable extinguishing equipment also illustrated and described. Walter Kidde & Co.

10. Sling Chains: An extremely informative catalog describes and illustrates all types of sling chains. In addition to full specifications, the manual tells how to select the proper type, gives advantages and limitations of the various kinds of chains, offers pointers on the care and inspection of chains, etc. American Chain & Cable Co.

11. "Plastic Work Hat": This folder is to stimulate wearing of protective hats by linemen and electrical construction workers. The folder points out that no metal is used in the hat and that each hat has been tested for dielectric resistance at 10,000 volts. Mine Safety Appliances Co.

12. Scaffold Jacks: Catalog SJ-1 describes and illustrates scaffold jacks. Dual purpose head accommodates either planks or stringers. Engineered design gives rigid support yet is lightweight, adjustable and folds for easy storage. Available in four standard sizes for reaching work up to 17'6" from the floor. Waco Manufacturing Co.

13. Industrial Lights, Lamps and Lanterns: Justrite catalog No. 546 features utility and safety lights, railroad and signal lanterns, and carbide lamps. A line of safety cans including oily waste cans, and dispensing cans is also described. Justrite Manufacturing Co.

14. "Antiseptic Soaps for Industrial Use": Booklet based on studies of industrial dermatitis discusses the different causes of this ailment and presents a preventive program employing the use of industrial soaps. Armour & Co.

15. Concrete Flooring Material: A product developed to meet the requirements of hard surface safety flooring in the industrial and ordnance field is described in a 12-page bulletin. According to the manufacturer, this product named DPS Masterplate produces an iron-clad floor surface that is static-disseminating, spark-resistant, non-combustible and wear-resistant. Master Builders Co.

16. "The Gratelite Story": How eye-saving light of high efficiency, excellent diffusion and low brightness is created by the new louver-diffuser, is described in this brochure. Gives complete details on the construction and performance of the sight-saving ⅜" cubes. It also contains photographic installation of Gratelite Louverall ceiling in a large aircraft company. Many other interesting lighting applications with complete engineering facts incorporated. Edwin F. Guth Co.

17. Industrial Wiping Towels: Brochure describes paper towels that are highly absorbent and disposable. Included in the bulletin are figures on specifications and savings. Scott Paper Co.

18. Brainard Scaffolding System: The unique Brainard scaffolding system is completely described in a 12-page bulletin. Shown are the principles of assembly, using the patented slip-fit arrangement which eliminates nuts, bolts, pins or tools, illustrates various applications, and shows all parts of the system in scale. Brainard Steel Division of Sharon Steel Corp.

19. Hydraulic Adjustable Ramp: Details of a manual floating 10,000 lb. capacity hydraulic adjustable ramp for loading docks are provided, with full illustrations, in a new catalog sheet. Rowe Methods, Inc.

20. Model 20 Shoveloader: A condensed picture catalog describes company's new model 20 Shoveloader, a rubber-tire tractor loader with a standard bucket capacity of 12 cubic feet. Designed for handling of bulk chemicals, sand, dry materials, castings, scrap, etc. Contains specifications, data and action diagrams. Baker-Lull Corp.

21. "Quick Reference Guide": The guide is a compact, illustrated 24-page booklet to all concerned with problems of building maintenance and construction. Various maintenance problems of roofs, floors, sash, masonry preservation, etc. are discussed. Tremco Manufacturing Co.

22. Ladder Shoes: Bulletin illustrates and describes ladder shoes designed to prevent ladder slipping on wet, dry, smooth, rough, greasy or gravelly surfaces. Described also are clipper vise jaws in sizes 3 inch to 6 inch. Johnson Ladder Shoe Co.

23. Electrical Plugs and Receptacles: Bulletin No. MC-108 illustrates and describes plugs and receptacles for industrial tools, power lighting, remote control, instruments, and portable electric equipment. A sectional view of the basic plug highlights a breakdown of illustrated types for particular uses. Joy Manufacturing Co.

24. Waterless Washstation: This 6-page brochure describes a waterless washstation which can be set up near places of work so that employees do not have to go to washrooms every time their hands get dirty. Cleanser is said to get out heavy soil without water or solvent. Sugar Beet Products Co.

25. Put Your Safety Message in Your Worker's Hand: Literature gives complete information on how you can cut insurance costs, reduce the risk of absenteeism, improve morale, encourage good housekeeping with safety message paper cups. U. S. Envelope Co.

26. Wire Rope: A 16-page 2-color illustrated catalog, designed to recommend the best wire rope for each major type of requirement used by contractors for bulldozers, derricks, dredges, elevators, overhead cranes, mining, logging, draglines, ship rope and ore and coal handling. Specifications and other data are also given for each type of rope. John A. Roebling's Sons Corp.

27. Guide Pin Covers: Brochure describes and gives specifications on covers for guide pins for die sets to protect operator and guide pin. Available in covers for gap only or for entire pin and gap. Wiesman Manufacturing Co.

28. Heavy Duty Skin Cleanser: Bulletin covers a complete line of industrial skin cleansers. Cost, approval of hygienic authorities, and tested quality is included in the bulletin. G. H. Packwood Co.

29. Safety Signs and Markers: A 50-page catalog has sections on pipe markers, wire markers, safety signs, reflective signs, masks and stencils and printed roll tape. Each product section in the catalog is tabled separately. Covered in the catalog is the company's full line of safety markers. Illustrations, specifications and job classifications are also dealt with. W. H. Brady Co.

30. Factory Hands: Illustrated folder describes a sulphonated oil, non-lathering skin cleanser and supplemental, non-abrasive corn meal scrubber for use in industrial washrooms. Individual and wall-type dispensers also featured. Stepan Chemical Co.

31. Athlete's Foot: Literature describes how to control Athlete's Foot in your shower room with Sani-Mist solution used in the Sani-Mist spray dispenser. Sani-Mist, Inc.

32. Safety Equipment: This 54-page, illustrated catalog describes an entire line of safety and firs aid equipment. Some of the categories are unit first-aid kits, burn and snake-bite kits, various medical components of the kits, stretchers, salt dispensers and auto first air kits. Respiratory protection, including gas masks, inhalators, resuscitators, blowers and air supply equipment is also covered. Protective clothing and air testing units are discussed. Davis Emergency Equipment Co.

33. Cover Goggle: This bulletin describes a goggle for use over prescription glasses. The frame is pliable vinyl, and the lens is either acetate or vinyl. Other features include light weight, strength, roominess, adequate ventilation, differing nose sizes, chemical resistance and replaceable lenses in green or clear styles. Willson Products, Inc.

34. Mc Donald Protectivest: This vest protects against flying metal particles shot from high speed milling and cutting machines. Stops a .38 caliber bullet fired at only 8 feet. Bulletin gives full details. B. F. McDonald Co.

35. Oily-waste Can: Presented in this 2-page bulletin are details of new waste can designed to contain oily wastes safely. Features include welded construction, ventilation, easily opened and closed cover, carrying handle and foot pedal for opening can when hands are full. Specifications for 4 different size cans appear in the bulletin. Protectoseal Co.

36. "How to Solve Oily Floors": New manual covers every major aspect of oily floor maintenance: safety from fire hazards; safe movement of personnel and products; safe operation of machinery; prevention and correction of floor damage and deterioration, etc. Oil-Dri Corp.

37. "Traction-Action": Illustrated folder announces "Floorsafe," an anti-slip self-polishing, synthetic-

resin floor dressing which has a high co-efficient of friction. May be used on all types of wood, resilient and non-resilient floors. Masury-Young Co.

38. Head and Eye Protective Equipment: Illustrated in this catalog are company's line of eye protection equipment. Welding and cutting goggles, goggles for wear over prescription lenses, safety spectacles, plastic all-purpose cover goggles, face shield, etc. Pennsylvania Optical Co.

39. Industrial Clothing: The properties and advantages of work uniforms made of Chem-Weave are explained in the catalog. Various styles are shown and resistance of the material to various chemicals is given in detailed tables. Chem-Wear, Inc.

40. Tubular Steel Scaffolding: This descriptive catalog explains application of the scaffolds for all types of maintenance and construction work. Detailed description of the locking braces and panels is included. No bolts or clamps are used, and the tower can be built to any height. Beaver Art Metal Corp.

41. "Thompson Servisafe Units for Pole and Wall Mounted Luminaires": Catalog No. PB-53 contains general information and detailed specifications on the new Servisafe line of metal pole units designed to permit safe, efficient ground-level Luminaire servicing. Detailed engineering drawings and construction included. Thompson Electric Co.

42. Stairways: Spiral and conventional stairways are fully described and illustrated in this 92-page catalog. Complete with technical data, drawing and specifications. Also available are standard detail sheets to assist in designing and layout out stairways. Woodbridge Ornamental Iron Co.

43. Plant Protection Against Theft, Fire and Sabotage: Folder describes the Guardsman Watchlock System for all plants, also gives instructive information to guide watchmen, guards and management. Detex Watchlock Corp.

44. Floor Drying Compound: A granular mineral compound which absorbs oil, grease, kerosene, water and other liquids is explained and illustrated in this brochure. The compound is light, can be spread by hand, reflects light and provides a non-skid surface for floors. The brochure includes charts and graphs as well as photographs of the compound in use on the floors. Eagle-Picher Co.

45. Welding Curtains: Flame and waterproof canvas welding curtains, designed to confine the welding operation to a given area, are discussed in this bulletin. Eyelets permit attachment by hooks or cords for placement. Salvage covers, used to protect equipment from water, dust and snow are also covered. Frommelt Industries.

46. "Switches for Industry": Catalog covers 22 groups of switches made up of 258 different types of switches, actuators, and enclosures. Complete characteristics, electrical ratings, and other engineering data are included to help you select the right switch for a given application. Micro-Switch.

47. Blast Cleaning Dust Control: Bulletin covers maker's entire line of equipment and accessories for blast cleaning and dust control. Discusses 3 methods of abrasive application and illustrates the equipment used for each. The bulletin is indexed by equipment, type, and purpose, which enables you to quickly select the machines that interest you most. Includes all standard units as well as a number of special machines for particular problems. Pangborn Corp.

48. How to Handle Bulk Liquids: This 8-page brochure illustrates and describes the modern way to handle bulk liquids with the new Plaxpak Carboys. Made of polyethylene, the bottles are light weight, non-breakable, excellent for shipping all sorts of industrial liquids. Plax Corp.

49. Safety Shoes: Illustrated in detail in this brochure is the company's line of Winguard safety steel toe "dress" and work shoes for men. Holland-Racine Shoes, Inc.

50. Safety Goggles & Spectacles: Literature features goggles, face shields, "split-joint" plastic frames, soft vinyl frame 50mm round hardened safety glass lenses, etc. Complete specifications included. Watchmoket Optical Co.

51. Noise Measuring Equipment: Bulletin describes a sound survey meter for preliminary surveys of sound levels to determine the amount of noise and to help indicate necessary steps for its control. This meter is already being used widely to improve working conditions of office personnel, increase comfort in hospitals, residential sections, etc. General Radio Co.

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Here's how it works—

Printed below are two identical Reader Service postcards—the bottom one for your use; the top one for later readers of this issue. The numbers listed on each card are keyed to products advertised and the new safety equipment and trade publications described on pages 239 through 249. Just circle the items you want to know more about, and we will ask the manufacturer to send you full information without obligation. Both cards are perforated for easy removal, and no postage is required.

New Safety Equipment

Products featured in this section have been carefully reviewed by Council engineers so as to bring you only what's new and reliable in the safety field. Only new safety and health products, or newsworthy improvements in existing equipment are eligible for listing.

Trade Publications

Here's a wealth of helpful trade literature—catalogs, spec sheets, booklets, brochures—that will help you compare before you buy. Whether you are in the market now, or think you may be at a later date, you'll want these valuable references in your safety equipment data file.

Products Advertised

As you read through this issue of the NEWS, you will find advertisements describing equipment that may help you solve some of your accident problem. Instead of making a "mental note," make sure you get full information by circling the corresponding page number on the Reader Service postcard. The letters L, R, T and B locate the ads on the page—left, right, top and bottom. IFC—inside front cover; IBC—inside back cover; BC—back cover.

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OCT. 1954
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The advertising pages of the News

. . . your guide to reliable suppliers of worthwhile safety equipment

The advertising policy of the NEWS requires that all equipment and products meet established codes and standards, have the approval of recognized testing agencies, or have proven their value through actual use in industry. Council engineers and technicians screen every advertisement to make sure that product description is accurate, and performance claims verified by reliable sources. It should not be construed, however, that products advertised are approved or endorsed by the National Safety Council.

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Before you mail your Reader Service postcard . . .

TAKE ANOTHER LOOK AT

- **the ADVERTISING pages**
- **the NEW SAFETY EQUIPMENT section**
- **the TRADE PUBLICATION section**

Make sure all the items you want to know more about are circled . . . check to make sure your name, organization, and address are printed on this side of the postcard . . . THEN mail it today.

CESCO

Lite-Specs

Cup-type Goggles

Spectacle-type Goggles

Plastic Frame Goggles

Cover Goggles

Approved Respirators

Coverlite Goggles

Fibre Glass Helmet

Approved Respirator Hood

Face Shields

WHERE TO BUY IT

ATLANTA, GA.
Guardian Safety Equipment Co.
427½ Moreland Avenue, N. E.

BIRMINGHAM, ALA.
L. P. Harless Company
2627 Seventh Ave., South

BOSTON, MASS.
General Equipment Corporation
261 Franklin Street

BUFFALO, N. Y.
The Watson Company
1443 Main Street

CHICAGO, ILL.
Universal Safety Equipment Co.
5115 Diversey

CINCINNATI, OHIO
Williams & Co., Inc.
3231 Fredonia Avenue

CLEVELAND, OHIO
Williams & Co., Inc.
3700 Perkins Avenue

COLUMBUS, OHIO
Williams & Co., Inc.
851 Williams Avenue

DALLAS, TEXAS
Guardian Safety Equipment Co.
900 Jefferson Tower Bldg.

DETROIT, MICH.
Averill Equipment Company
19225 Conant Avenue

EAST ORANGE, N. J.
Guardian Safety Equipment Co.
491 Prospect Street

HOUSTON, TEXAS
Guardian Safety Equipment Co.
1915 A Westheimer

INDIANAPOLIS, IND.
Averill Equipment Company
1917 North Goodlett

KANSAS CITY, MO.
Safety, Incorporated
17 E. 31st Street

KNOXVILLE, TENN.
Safety Equipment Distributing Co.
832 W. Main Street

LITTLE ROCK, ARK.
Fire Appliance & Safety Co.
1114 W. Markham

LOS ANGELES, CALIF.
Guardian Safety Equipment Co.
7223 S. Main Street

LOUISVILLE, KENTUCKY
Williams & Co., Inc.
1109 S. Preston Street

MILWAUKEE, WIS.
Universal Safety Equipment Co.
3155 S. 7th Street

PEORIA, ILL.
Universal Safety Equipment Co.
116 S. Garfield

PHILADELPHIA, PA.
Guardian Safety Equipment Co.
214 S. 45th Street

PITTSBURGH, PA.
Williams & Co., Inc.
901 Pennsylvania Avenue

ST. LOUIS, MO.
Safety, Inc.
2608 Olive Street

ST. PAUL, MINN.
Continental Safety Equipment, Inc.
1551 Selby Ave.

SALT LAKE CITY, UTAH
Universal Fire & Safety
Equipment Co., Box 1587

SAN FRANCISCO, CALIF.
Guardian Safety Equipment Co.
50 Hawthorne Street

SPOKANE, WASH.
Spokane Safety Appliances
W. 314 Pacific Ave.

TOLEDO, OHIO
Williams & Co., Inc.
650 E. Woodruff Avenue

TULSA, OKLA.
Guardian Safety Equipment Co.
1742 S. Main Street

WICHITA, KANS.
Guardian Safety Equipment Co.
723 S. Broadway

MEXICO CITY, D. F.
Safety Equipment S. A.
Sullivan—95

MONTREAL, CANADA
The Butler Optical Company, Ltd.
1520 Mountain Street

CHICAGO EYE SHIELD COMPANY • 2306 Warren Boulevard, Chicago 12, Illinois

CESCO

CESCO FOR SAFETY

To get a greater return for your eye safety dollar...

As a natural result of the continued efforts of Safety Directors to reduce eye accidents, more and more workers are wearing industrial safety prescription glasses on the job.

In a growing number of instances, however, arrangements have not been made to take full advantage of the complete services of the professions to verify the lens properties of these glasses, fit the glasses to the worker and maintain them in proper adjustment.

As a consequence, safety standards have been jeopardized in some areas, through the use of flammable non-safety frames, — or lenses of questionable impact resistance. Tragic, unnecessary, and costly accidents have resulted.

American Optical Company believes that corrective-protective glasses should reach the employees only when adequate professional services are provided. Such a procedure is a sure and effective way to combat the breakdown in safety standards. In some states, this procedure is required by law.

Corrective-protective glasses made by American Optical Company meet all safety requirements. Super Armorplate lenses carry this mark (AO) indicating that they are heat-strengthened and comply with rigid specifications for thickness and impact resistance. Frames are made of corrosive-resistant metal or non-flammable plastic and are sturdy enough to withstand use under normal working conditions. They also carry the AO trademark.

The employment of the full cycle of professional services in connection with prescription safety glasses and the standardization of AO lenses and frames will assure maximum protection for the worker and the greatest return for every dollar invested under your supervision in visual safety.

Be sure to see our film, Room 524A, Conrad Hilton, at the National Safety Show.

American Optical
SAFETY PRODUCTS DIVISION

Keep your workers in the Safety Zone with American Optical Safety Equipment.

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES